



Сводный каталог

«Сименс Мобильность» запустила консолидированный портфель компонентов

Компания «Сименс Мобильность» запустила MoCom – консолидированный и единый источник, где впервые отображается диверсифицированный портфель компонентов для железнодорожного транспорта, доступный всем заказчикам. MoCom предложит полный спектр электромеханических комплектующих, а также системные решения для современных железнодорожных транспортных средств. В каталог входят пантографы, двигательные установки, тележки, тормоза и бортовые блоки питания. Благодаря MoCom производители подвижного состава и компонентов, а также операторы получат преимущества за счет использования лучших продуктов на рынке, которые помогут эффективно эксплуатировать железнодорожные транспортные средства на протяжении всего жизненного цикла.



«Наш многолетний опыт работы с поездами и локомотивами позволяет нам предложить железнодорожной отрасли комплексный портфель компонентов и систем. Он разработан с точки зрения производителя транспортных средств специально для ее нужд – заявил Альбрехт Нойман, генеральный директор по подвижному составу компании «Сименс Мобильность». Через MoCom производителям подвижного состава и комплектующего оборудования, а также операторам будет еще проще и удобнее приобретать отдельные компоненты и целые системы, которые помогут им оптимизировать и улучшить характеристики их железнодорожных транспортных средств».

«Сименс Мобильность» представила в MoCom широкий спектр предложений. В

него входит обеспечение надежных систем и компонентов для легкорельсового транспорта и трамваев, систем метро и АРМ, региональных и высокоскоростных поездов, а также локомотивов и пассажирских вагонов. Иными словами, в портфеле учтены все возможные напряжения, типы и размеры линий электропитания для всех сегментов железнодорожного рынка.

Региональная структура компании «Сименс Мобильность» и знакомство с конкретными транспортными системами и нормативными актами позволяют ей адаптировать для заказчиков компоненты, соответствующие всем рыночным сертификатам и стандартам. Кроме того, глобальное присутствие компании, ее сеть производственных мощностей и опыт обеспечивают оперативное, гибкое и эф-

фективное сервисное обслуживание.

«Сименс АГ» (Берлин и Мюнхен) – ведущий мировой технологический концерн, который придерживается высокого уровня инжиниринга, инноваций, качества, надежности и интернациональности на протяжении более 170 лет. Компания представлена по всему миру и специализируется в таких областях, как интеллектуальная инфраструктура для зданий, системы для распределенной энергетики, автоматизация и цифровизация в непрерывном производстве и обрабатывающей промышленности. «Сименс» соединяет реальный и цифровой миры во благо своих клиентов и общества в целом.

Через отдельно управляемую компанию «Сименс Мобильность», лидирующего поставщика умных мобильных

решений для железнодорожного и автомобильного транспорта, «Сименс» помогает формировать мировой рынок пассажирских и грузовых перевозок. Благодаря контролю уровня инжиниринга, инноваций, качества, надежности и интернациональности на протяжении более 170 лет. Компания представлена по всему миру и специализируется в таких областях, как интеллектуальная инфраструктура для зданий, системы для распределенной энергетики, автоматизация и цифровизация в непрерывном производстве и обрабатывающей промышленности. «Сименс» соединяет реальный и цифровой миры во благо своих клиентов и общества в целом.

Штат сотрудников компании насчитывает около 293 тыс. человек по всему миру.

Цветная фанера

SVEZA UV Color вышла на рынки Северной Америки и Европы

Компания «Свеза» начала поставки специализированной цветной фанеры с UV-покрытием на рынки Северной Америки и Европы. Новый продукт SVEZA UV Color уникален, аналогов в России не производится. Данное направление является перспективным для «Свезы», которая взяла курс на выпуск строительных и отделочных материалов из березовой фанеры под конкретные запросы клиентов.



«Свеза» – один из немногих производителей, использующих технологию покрытия фанеры UV-лаком, и единственный, кто предлагает неограниченную цветовую палитру, а также выбор степени укрывистости поверхности материала. В компании считают, что за таким продуктом будущее, так как в современном мире существует тенденция ухода от массовых производствен-

вались, линия по выпуску UV-фанеры введена в эксплуатацию в Петербурге почти 2 года назад. Именно под это оборудование разработана технология.

«Наш новый продукт – это комплексное решение для клиентов. Мы поставляем фанеру полностью готовую к производству конечного продукта. Благодаря технологии, фанере можно придать абсолютную

Как сообщалось, «Свеза» начала производство UV-фанеры в июне 2019 года. Покрытие наносится в несколько слоев, каждый из которых отверждается под воздействием

«Свеза» – российская компания, мировой лидер на рынке березовой фанеры. Продукция «Свезы» завоевала доверие потребителей в 90 странах мира на пяти континентах. Она используется в строительстве небоскребов и олимпийских объектов, производстве магистральных автоприцепов, высокоскоростных поездов и танкеров для транспортировки сжиженного природного газа, создании экологичной мебели и стильных интерьеров. «Свеза» – поставщик №1 в России для монолитного строительства. «Свеза» выпускает порядка 1,4 млн куб. м высококачественной продукции ежегодно, включая фанеру и древесно-стружечные плиты.

«Свеза» работает в России с 1997 г. За это время компания провела модернизацию и масштабное увеличение производства с использованием новейших технологий и оборудования. «Свеза» создает в российских регионах современные рабочие места, на которых трудятся династии опытных мастеров.

Компания «Свеза» включает в себя ООО «Свеза-Лес» (поставщик) и комбинаты-производители товаров: в Санкт-Петербурге, Вологодской, Свердловской, Тюменской, Костромской (2 комбината) областях, а также в Пермском крае. Комбинаты располагаются в местах, традиционно богатых березовыми лесами. Удобное географическое расположение комбинатов обеспечивает оптимальную логистику.

SVEZA UV COLOR Специализированный продукт для транспортной мебели и интерьера

100% БЕРЕЗОВАЯ ФАНЕРА, ПОКРЫТАЯ СПЕЦИАЛЬНО РАЗРАБОТАННЫМ УФ-ОТВЕРЖДАЕМЫМ ЦВЕТНЫМ ЛАКОМ

ПРЕИМУЩЕСТВА И ОСОБЕННОСТИ

- Выбор оттенка по системе RAL
- Надежная защита от ультрафиолета
- Устойчивость к механическим повреждениям
- Вся фанера имеет сертификат качества
- 100% березовая фанера
- Специальная технология производства

ОБЛАСТИ ПРИМЕНЕНИЯ

- Мебель
- Интерьер
- Транспортная мебель
- Внутренняя отделка
- Внешняя отделка

КЛИЕНТ ВЫБИРАЕТ, ТАК КАК

- Поставляет качественный экологичный продукт
- Гибко формирует цены
- Возможность наносить продукты в любые цвета

Первая партия

Курганмашзавод поставил за рубеж мини-погрузчики «Made in Russia»



Первая партия мини-погрузчиков с бортовым поворотом MKCM-1000 со знаком «Made in Russia» производства ПАО «Курганмашзавод» (входит в НПО «Высокоточные комплексы» Госкорпорации Ростех) отгружена в Республику Казахстан. Техника поставлена металлургическому предприятию ТОО «Казцинк», производящему цинк, свинец, медь и драгоценные металлы. Машины будут использоваться для хозяйственных нужд компании. В комплексе с ними отгружено навесное оборудование нескольких видов, в том числе ковш основной и карьерный, вилы и стрелы грузовые, снегоочиститель и другие.

Ранее компания уже неоднократно закупила MKCM у ПАО «Курганмашзавод». Приобретение очередной партии машин – признание надежности курганской техники. А маркировка – дополнительное тому подтверждение.

Гражданская техника ПАО «Курганмашзавод», в том числе MKCM, в 2020 году прошла добровольную сертификацию в Российском экспортном центре. Сертификат дает право

Курганмашзаводу маркировать свою технику логотипом «Сделано в России», а изделия включены в электронный каталог экспортеров на иностранных языках. Маркировка гражданской продукции ведущего оборонного предприятия России знаком «Made in Russia» повышает узнаваемость продукции на зарубежных рынках, что, безусловно, отразится и на уровне доверия со стороны покупателей и партнеров.

Мини-погрузчики с бортовым поворотом MKCM-800 и MKCM-1000 Курганмашзавод производит более 30 лет. Машина хорошо известна потребителям и широко применяется в промышленности, строительстве, коммунальном и дорожном хозяйстве, а также в других отраслях. Идеально подходит для ухода за тротуарами, пешеходными дорожками, аллеями, рынками, при прокладке коммуникаций, работе по обслуживанию дорог и обустройству ландшафтов. Благодаря компактности, маневренности, MKCM можно использовать в самых ограниченных пространствах. Она незаменима для погрузки и перемещения грунта, сыпучих пород, планировки участков местности, уборки территорий от снега и мусора, для транспортно-складских работ со штучными грузами, рытьем и траншей, бурения скважин, приготовления подвижных бетонных смесей и других работ.



АО «НПО «Высокоточные комплексы» образовано в 2009 году с целью консолидации научно-технического потенциала группы профильных предприятий для создания на основе инноваций и технологической модернизации существующей производственной базы перспективных вооружений, военной и специальной техники (ВВСТ) в области высокоточных систем и комплексов вооружения тактической зоны боевых действий. Входит в состав Госкорпорации Ростех.

ПАО «Курганский машиностроительный завод» – крупнейшее предприятие Курганской области, один из лидеров военно-промышленного комплекса России. ПАО «Курганмашзавод» – единственное в стране предприятие, выпускающее боевые машины пехоты, стоящие на вооружении армий десятков стран мира. Несколько десятилетий завод производит конкурентоспособную продукцию, повышая престиж российского оружия на мировом рынке. В последние десятилетия предприятие вступило в новую фазу своего развития, в которой органично сосуществуют блоки военной и гражданской продукции. Широкий ассортимент продукции гражданского назначения уверенно завоевывает российские и зарубежные рынки. С февраля 2019 года ПАО «Курганмашзавод» входит в НПО «Высокоточные комплексы» Госкорпорации Ростех.

Партнёрство

19 марта 2021 года в Санкт-Петербурге состоялось торжественное подписание соглашения о вступлении в Консорциум «ОБЪЕДИНЕННЫЙ ПРОМЫШЛЕННЫЙ КОМПЛЕКС» российско-чешской компании ООО «ТАХТЕХ РУС» (ТАХТЕХ S.r.o.), локализовавшей производство на территории Российской Федерации.

Подписание документа состоялось в присутствии консула по торгово-экономическим вопросам Генерального консульства Чешской Республики Лубоша Лаштувки, учредителя ТАХТЕХ S.r.o. и ООО «ТАХТЕХ РУС» Иржи Тахтеца и президента Ассоциации литейщиков Санкт-Петербурга и Ленинградской области, заслуженного металлурга РФ, д.т.н. профессора и председателя ревизионной комиссии Ассоциации «Станкостроение» Станислава Каченко.

Документ подписали: генеральный директор Ведущего Партнера Консорциума «ОБЪЕДИНЕННЫЙ ПРОМЫШЛЕННЫЙ КОМПЛЕКС» Сергей Колпаков и генераль-

ный директор ООО «ТАХТЕХ РУС» Вячеслав Коробейников. «Взаимодействие на площадке Консорциума, обмен информацией о действующих и планируемых к реализации проектах, позволит компаниям нарастить общий



портфель заказов, качественно, эффективно и в срок выполнять работы по проектам, а также повысит экономический эффект для компаний. Непосредственное сотрудничество в рамках Консорциума даст возможность его участникам совместно выполнять крупные проекты по модернизации термических и кузнечно-прессовых производств машиностроительных предприятий Российской Федерации», – отметил Сергей Колпаков.

«Уверены, что благодаря вступлению в Консорциум, мы сможем применить накопленный опыт для участия в проектах, направленных на развитие отечественного производства, а также развивать потенциал участников Консорциума для укрепления экономического сотрудничества между Россией и Чехией», – подчеркнул Вячеслав Коробейников.

Соглашение направлено на достижение роста эффективности компаний путем плодотворного сотрудничества, совместного и согласованного использования ресурсов, которыми располагает объединение промышленных, проектных и научных организаций Консорциума «ОБЪЕДИНЕННЫЙ ПРОМЫШЛЕННЫЙ КОМПЛЕКС» и российско-чешская производственная компания ООО «ТАХТЕХ РУС».

любой цвет по системе RAL, что является преимуществом перед материалами покрытиями пленкой. И это более удобно, чем покупать белую фанеру и искать посредников для дальнейшей покраски, подбирать цвет и степень блеска для всех элементов изделия. Наш основной потребитель – это производитель корпусной мебели и интерьерных панелей, использующие фанеру», – говорит Наталья Петрова, менеджер по продукту компании «Свеза».

ем ультрафиолета. Весь процесс максимально автоматизирован и абсолютно экологичен. Финишное покрытие, в зависимости от верхнего лака, может обладать разными характеристиками – от матового до высокоглянцевого. Основная область ее использования – производство мебели, внутренняя отделка и дизайн интерьеров. На протяжении длительного времени конечный продукт из такой фанеры сохраняет товарный вид.

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Солнечный льдогенератор нового типа

Высокотехнологичное решение из Южной Германии – для немецко-индонезийского проекта

В будущем мелкие рыбные хозяйства неблагополучных регионов Индонезии смогут продавать свою продукцию по всей стране благодаря использованию непрерывных холодильных цепей. Это стало возможным за счет применения солнечного льдогенератора блочного льда. Такой льдогенератор нового типа был разработан в рамках многолетнего немецко-индонезийского сотрудничества. «Рыба не портится, лед вырабатывается абсолютно экологично, — сообщает Франк Штегмюллер из Германского общества международного сотрудничества (GIZ). — Это настоящая немецко-индонезийская история успеха».

Индонезия является мировым лидером по производству тунца и вторым по величине производителем рыбы в целом. Однако мелким рыбным хозяйствам, использующим экологичные способы ловли рыбы, часто не удается довести свою рыбу до потребителей из-за отсутствия возможности её охлаждения. В результате этого мелкие рыбные хозяйства практически не в состоянии конкурировать с крупными производителями рыбы; значительная часть рыбы портится, а рыбаки беднеют.

Политики Индонезии намерены принять меры по сохранению имеющихся запасов рыбы и обеспечить рыбакам из отдаленных областей стабильный доход. Решающую роль в этом играет непрерывное охлаждение пойманной рыбы. По инициативе и при поддержке GIZ началась разработка солнечного льдогенератора. Кроме того, совместно с несколькими индонезийскими, немецкими и европейскими компаниями было налажено производство льдогенераторов в самой Индонезии. В 2016 году началась разработка, в 2018 году была успешно запущена пилотная установка, а в нынешнем 2021 году в Индонезии будет введена в эксплуатацию первая промышленная установка.

Отвечая основной идее Индустрии 4.0, данная инновационная технология обеспечивает динамичное и автоматически адаптированное к имеющейся солнечной энергии производство до 1,2 т блочного льда в день. Для этого не требуются ни электропитание, ни дорогой аккумулятор большой емкости. Это позволяет вырабатывать блочный лед в местах, отдаленных от электросетей, и использовать его для охлаждения пойманной там рыбы. По словам господина Штегмюллера из GIZ: «Это обеспечивает стабильный доход рыбакам, ведущим экологическое хозяйство, именно в отдаленных, малообеспеченных регионах Индонезии».

Компоненты и ноу-хау были безвозмездно предоставлены на стадии разработки немецкими компаниями Bitzer, Ziehl-Abegg и BAE Batterien. За разработку и техническое сопровождение отвечали эксперты Дрезденского института вентиляционной и холодильной техники (ILK Dresden). Производство солнечных льдогенераторов осуществляется на индонезийском промышленном предприятии Selaras Mandiri Teknik (AIREF). Партнерами проекта являются также компании REC Solar, ATW Solar, Studer и Omron.



Индонезийская компания PT. Selaras Mandiri Teknik, расположенная в Джакарте и Сурабае, является ведущим специализированным производителем холодильной техники. Под марками Airef и Greenhalgh эта компания, а также ее дочерние компании Aiscool и Starr Panel предлагают высокоэффективные, отвечающие мировым стандартам решения в области холодильной техники для различных сфер промышленного применения. Компания Selaras Mandiri Teknik имеет годовой оборот \$12 млн, насчитывает 200 сотрудников и ведет свою деятельность в 7 странах мира.

Германское общество международного сотрудничества (GIZ) содействует международному сотрудничеству в области устойчивого развития с целью обеспечения достойного будущего во всем мире. Эта некоммерческая федеральная организация насчитывает около 20100 сотрудников в 120 странах мира, а ее годовой оборот, осуществляемый по поручению федеральных министерств Германии и других заказчиков, составляет около 3 млрд евро. С 1975 года GIZ оказывает поддержку немецко-индонезийскому сотрудничеству на месте в таких сферах, как энергия, охрана окружающей среды и профессиональное образование (данные за 2019 год).

Компания Ziehl-Abegg (Кюнцельзау, Германия) является одной из ведущих мировых компаний в сфере производства техники для вентиляции, техники автоматического регулирования и приводных систем. На предприятиях этой высокотехнологичной компании (все данные за 2019 год), расположенных в Южной Германии, заняты 2400 сотрудников. Во всем мире на предприятиях компании работают 4300 сотрудников. Оборот составляет 633 млн евро. Три четверти оборота приходится на экспорт.

Productivity Master points the way to digitalization

Seamless connectivity of handling and software solutions developed by Festo

The Productivity Master, a modular demonstration system for personalised USB memory sticks from Festo, is showing how automation technology will evolve along the value chain when combined with digitalisation. Thanks to seamless connectivity, everything fits perfectly, from the mechanical and electric systems to the intelligence. The Festo automation platform provides an integrated and practical system to link all Festo engineering tools, components and solutions in hardware and software.

The plant achieves the automation balancing act between mass production and individualization of a finished product. The electrical products, the axis mechanics, the electric and the software are planned as a complete automation platform with seamless connectivity. With this consistency, users save a lot of time in their machines and systems – from planning to commissioning – and gain process reliability because everything fits together. Industry 4.0 included.

Cloud-based concept

For example, the Productivity Master uses a cloud-based concept for registering and storing customer data complying with data protection regulations. This allows USB sticks to be produced with a personalized design as well as personalized data content. Customers could do this from home via the Internet without having to enter further data from other people on the supplier side.

Customers can use the same concept to reduce labour costs and coordinate the process from the home office. Festo's IoT gateway securely connects the machine to the cloud so that operators cannot only retrieve production data from the cloud, but also have access to the machine's diagnostic data, even if they are sitting hundreds of kilometres away in their home office.

Mask production and vaccines

The pandemic year 2020 revealed just such a contrast between mass production and individualization or small series production in the examples of mask production and vaccine research. The latter is more focused on precise data collection. For mass produc-

tion, however, it is crucial to be able to use remote diagnostics and maintenance tools to maintain machine uptime as long as possible while protecting operator health. These are just about ideal conditions for cloud-based diagnostic tools.

It doesn't matter if the product weighs a few grams or 100 kg – being a technology-neutral company, Festo has the product range to do this, explains Nigel Dawson, Head of Business Development Electric Automation at Festo. While the Productivity Master features a mix of pneumatic and electric automation, from flow sensors to servo drives, from pneumatic slide units to electric Cartesian robots, it is the way these products are connected that enables true digitalization.

Seamless connectivity

By leveraging industry-standard networks such as EtherCAT, OPC-UA, IO Link and MQTT, Festo can create a seamless data stream from individual sensors to remote IO, servo drives, controllers and the cloud. 'This technology-neutral approach has a major impact on energy efficiency and sustainability. We call this 'seamless connectivity', adds Dawson.

The machine was designed in record time. Useful here: Festo's state-of-the-art and unified engineering environment – project planning and management of the digital twins included. This allows designers and developers to work collaboratively worldwide. With the Festo Handling Guide Online HGO, users select and dimension 1D/2D or 3D gantries in just three steps. For quick and easy programming, configuration and commissioning in a shared virtual environment, they use the Festo Automation Suite.

Digital Customer Journey

'Along the Digital Customer Journey, we enable customers to correctly and efficiently select and size their products online, add them to a shopping cart in a seamless process, view their pricing and delivery in real time, and track their products throughout the supply chain', says Dawson, describing this digital value chain. With developments in artificial intelligence (AI), Festo is expanding concepts such as digital nameplates, digital twinning and, of course, AI-driven predictions of machine conditions for remote maintenance.

Four fully connected stations

Customers create the production order at the first station by registering with their name and perhaps a picture. A QR code identifies the visitors at the machine. A vision sensor SBSI from Festo registers the visitors and starts the production order. This is followed by stock management. This mechatronic complete solution, made up among other things of a planar surface gantry EXCM in size 40 for fast picking and placing of the USB memory stick, offers all the options from stock management and workpiece handling to the cloud.

The USB memory stick is then transported, printed, turned over and then passed on. The work steps at the second station involved are holding, moving, handling, rotating and positioning and identifying the workpiece position as well as identifying, separating, gripping and applying labels. Fast transfer to a label printer is carried out at station 3 by a highly dynamic linear gantry EXCT with dynamic servo motors EMMT-AS and servo drives CMMT-AS. The rotation functions are carried out by electric rotary drives ERMH.

The process is completed in station 4 where files are uploaded to the USB memory stick. This involves holding the workpiece, turning and carefully positioning the cap and press-fitting delicate parts. This is done using the attractively priced electric cylinders EPCO and rotary drives ERMO. The personalised USB memory sticks are then handed out to the visitors.

Festo is a global player and an independent family-owned company with headquarters in Esslingen am Neckar, Germany. The company supplies pneumatic and electrical automation technology to 300,000 customers of factory and process automation in over 35 industries. The products and services are available in 176 countries. With about 21,000 employees in over 250 branch offices in 61 countries worldwide, Festo achieved a turnover of around €3.07 billion in 2019. Each year around 8% of this turnover is invested in research and development.

In this learning company, 1.5% of turnover is invested in basic and further training. Yet training services are not only provided for Festo's own staff – Festo Didactic SE also supplies basic and further training programmes in the field of automation technology for customers, students and trainees.

Innovative cobot ideas

New modular gearbox kit from igus



Cost-effective, lightweight plug & play combination consisting of gearbox, encoder, controller, force control system and motor for service robotics. The potential for service robotics is enormous: in kitchens and bars, in the area of nursing, or in agriculture and logistics, lightweight robots facilitate the automation of monotonous or non-ergonomic tasks. To make the implementation of such new concepts easy and, above all, cost-effective, igus is presenting a new modular gearbox kit for cobots at the Hannover Trade Show. The fully integrated tribo strain wave gear with motor, absolute-value encoder, force control system and controller is the main component of this kit.

'With our Low Cost Automation solutions, we enable design engineers to cost-effectively take part in the future of service robotics', says Stefan Niermann, who is responsible for the area of Low Cost Automation in the extended igus management structure. 'This opens up space for new ideas in the area of automation: robots that can dispense coffee in retail shops or clear out the dishwasher at home. Cobots, that can be used in the area of nursing as well as in industry – and everything made in Germany'. The gearboxes play an especially important role in this context as they are the heart of any modern robot. For this reason, motion plastics specialist igus introduced a new generation of tribo strain wave gearboxes for movement on the 5th robot axis last year. Friction and wear are optimised by means of lubrication-free tribo-polymers. The use of plastics enables an extremely compact design and cost-effective production. The drygear strain wave gear can be

used along the last axis of an articulated arm, linear robot or delta robot, for example, in front of deft gripper systems. The new modular gearbox kit for cobots that igus is showing at the Hannover Trade Show 2021, supplements the wide range of igus products in the area of Low Cost Automation. This plug & play solution facilitates the speedy implementation of exciting cobot ideas, without any thought being given to the power electronics.

Fully integrated strain wave gear for low cost cobot applications

The modular gearbox kit in sizes 80 and 105 consists of tribo strain wave gear with integrated motor controller, force control electronics, absolute-value encoder and motor. In the gearbox, a tribo wave generator and a tribo flex ring with external teeth, as well as a brushless DC motor with external rotor are used. On the basis of the gearbox, an individual robot can also be designed

as a cobot with the help of joining links, thanks to the additional electronic components. 'For our lightweight strain wave gears, we see market opportunities in robots whose total weight is less than 8kg', clarifies Alexander Mühlens, head of Low Cost Automation at igus. 'This is because, where robotics in Low Cost Automation is concerned, the self weight is always important and not only the payload and a low price. Lightweight robots are easier to transport and can be used more efficiently on driverless transport systems, on 7th robot axes or, in the near future, even on drones.' The low weight is also a significant advantage when the systems are used in cobots, as smaller masses mean that lower forces are generated when collisions occur. HRC capabilities are possible thanks to the electronic components in the fully integrated strain wave gear. Thanks to absolute-value encoder technology, forces as well as torque can be determined and safely limited by means of the motor current. For this purpose, igus relies on a double encoder, in which a measurement is carried out in front of and behind the joint in order to detect forces and torque levels and react accordingly.

The igus range of products in the area of Low Cost Automation is growing continuously

The new fully integrated strain wave gearboxes are to be used this year in the new version of the ReBel, the igus service robot. As a result, this generation of robots will be considerably slimmer and, thanks to the integrated BLDC motors with power electronics, will be more cost-effective. Alexander Mühlens points out: 'Our goal is to offer the ReBel on the market for 2,900 euros even for small order quantities. It should be able to carry 2kg, have a range of up to 650mm, as well as a self weight of less than 10kg and a minimum running time of 2 million cycles.' The cobot gearbox kit supple-

ments the wide portfolio of igus in the area of Low Cost Automation – from gearboxes and a large variety of robot kinematics to the control system. Low Cost Automation means cost-effective prices for new users and also automating as much as necessary. As a result, the investment pays for itself in just a few months. The new modular gearbox system will also be available on RBTX.com. On the online marketplace, interested parties can put together their robot kinematics with vision, safety or gripper components that matches their requirements and their budget exactly. The igus promise is that everything fits together, both on the hardware side and software side – in accordance with the igus 'Build or Buy' approach, namely putting together a robot oneself or obtaining a ready-made solution.

igus GmbH develops and produces motion plastics. These lubrication-free, high-performance polymers improve technology and reduce costs wherever things move. In energy supplies, highly flexible cables, plain and linear bearings as well as lead screw technology made of tribo-polymers, igus is the worldwide market leader. The family-run company based in Cologne, Germany, is represented in 35 countries and employs 3,800 people across the globe. In 2019, igus generated a turnover of €764 million. Research in the industry's largest test laboratories constantly yields innovations and more security for users. 234,000 articles are available from stock and the service life can be calculated online. In recent years, the company has expanded by creating internal startups, e.g. for ball bearings, robot drives, 3D printing, the RBTX platform for Lean Robotics and intelligent 'smart plastics' for Industry 4.0. Among the most important environmental investments are the 'change' programme – recycling of used e-chains – and the participation in an enterprise that produces oil from plastic waste. (Plastic2Oil).

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The New Post-Covid19 World

The New Silk Road: a new dialogue between East and West in the context of global economic recovery

(From page 5)

Obviously, given the current level of global linkages, movement and general interdependence, the response can no longer be limited to narrowly specialized sanitary-epidemiological coordination – instead, it should be multilevel, involving political, economic, legal and information aspects.

The current crisis has shown that the mandate and mechanisms of the World Health Organization (WHO) are insufficient for the necessary coordination. Is it possible, given the changed reality and the imminent global economic crisis, to establish new rules of interaction and coordination among countries?

The Health Silk Road. Missed opportunities? New approaches?

The nature and speed with which the coronavirus is spreading around the planet, the difficulties that international organizations have encountered in obtaining information and accessing affected areas, have uncovered a lack of institutionalized information exchange systems, even in sensitive areas such as sanitary and epidemiology.

In a situation where there is no vaccine (according to various forecasts, a confirmed and tested drug may appear within 10-12 months at earliest), the threat of new waves of the epidemic remains imminent. For example, Japan and Singapore have already been affected by the second wave of infections. Almost all countries affected by the coronavirus are preparing the population for the prospect of long-term 'cohabitation' with the virus and the development of new socio-cultural and behavioral norms.

Once the domestic situation has been more or less stabilized and national health care systems, economies and society as a whole have developed models of existence under the long-term threat of a pandemic, the time will come to review the relationships between countries, including their interaction during the post Covid-19 crisis. Already today, international experts are asking questions: what will happen to the international division of labour? What should the sup-

ply chain expect? What changes will international trade undergo? How will the regime for international financial transactions change? Does the world expect 'deglobalization'?

Certainly, one of the most pressing needs in light of a permanent potential threat of the virus will be the establishment of a multilateral system of coordination between countries on health issues. Only a constant exchange of reliable sanitary-epidemiological information and coordination of measures will allow for relatively stable international relations and functional socio-economic 'transactions'.

China's leaders have intended to take a step in this direction after the country had overcome its critical period of the epidemic. This was followed by flows of medical equipment and other protective supplies to the rest of the world including countries in Europe, North America, Latin America and Africa. Delegations of Chinese doctors were dispatched to places with a difficult epidemiological situation to share their experiences.

The Chinese leadership announced that the package of measures is at the heart of the Health Silk Road Programme, which in turn is an important part of China's global 'Belt and Road Initiative', or as it is called the 'New Silk Road'.

The theme of multilateral cooperation in the field of healthcare under the 'Belt and Way Initiative' was first mentioned in 2015 in the three-year plan 'Exchange and Cooperation on Health, 2015-2017'.

The main idea of the project was the modernization of the global health system. It included strategic medium and long-term goals of crucial importance in current times, such as the creation of a communication platform in the field of health, development of health forums at the intergovernmental level as well as the development of multilateral mechanisms for the prevention and control of infectious diseases.

The global health communications platform is the most relevant task in current times. Given the rapid spread of infections and the unpredictability of the epidemiological situation, access to and exchange of reliable information related to the outbreak is crit-



Третья международная парламентская конференция Группы Поддержки Шелкового Пути, ПА ОБСЕ, Андерматт, Швейцария, 5-7.09.2019
(Third International Parliamentary Conference of the Silk Road Support Group OSCE PA, Andermatt, Switzerland, 5-7.09.2019)



ical. The lack of uniform standards, norms of conduct and exchange of information under the threat of a pandemic, as demonstrated by the example of the non-admission of representatives of the World Health Organization to affect area of Wuhan, China, can have tragic consequences for all countries.

For what reason did most Western countries refuse to join the Health Silk Road Initiative five years ago? In the opinion of many experts, the initiative lacked a well-defined concept and international standards necessary in order to gain international legitimacy and engage other countries, especially Western ones. The document was too densely filled with appeals for the strategic strengthening of China's global weight and influence.

Is it possible and under what conditions to revive the Chinese initiative of the global system of cooperation in health care?

If it were possible to overcome the 'China-centricity' of this initiative, which has traditionally been rejected by Western countries, and develop clear rules based on international standards, the model of multilateral cooperation based on the historical ties of the Silk Road could become a symbol of balanced participation and dialogue between the 'generalized West' and the 'generalized East'.

Such a model may also be in demand in a post-pandemic period,

when focusing on how to overcome the economic crisis, restore economic growth, create jobs and restore broader economic ties. According to the forecasts of the International Monetary Fund, the world's GDP will decline by 3 percent in 2020, which is far worse than the backlash of the 2008 financial crisis (-0.1). According to the IMF chief economist, Gita Gopinath, should the pandemic continue and the decline of the world economy exceed 8 percent in 2021, the International Labour Organization predicts that 25 million people could lose their jobs.

The forthcoming crisis is predicted to be much harsher than the 2008 financial crisis. It is worth mentioning that it was through the coordinated actions of governments of developed and developing states that the world economy managed to recover in a fairly short period of time. China's contribution to the overall basket of country stimulus measures proved to be very impressive, totalling up to \$563 billion in financial injections.

This time it is still unclear whether the measures taken in the sphere of monetary and fiscal policy will be coordinated.

The New Silk Road and international norms. The role of the OSCE PA

As epidemiological conditions improve in most countries, the number of people infected decreases and

governments relax quarantine-related measures, the concerns about the socio-economic crisis triggered by the pandemic and the fight against it have become more visible.

While major governments are focusing on domestic health security and citizens' socio-economic priorities, global coordination and joint crisis management have been extensively discussed in virtual format by international organizations (IOs).

For example, the United Nations has presented a 'Road Map for the immediate socio-economic response to Covid-19'. The UN has identified three 'cornerstones of the response'. The first is the Solidarity Response Fund (a WHO initiative established in March to finance the fight against the coronavirus). The second is the UN plan for a global humanitarian response to the pandemic. The third is the implementation of the UN socio-economic recovery plan.

The important role of parliamentarians in building a system of social trust during the Covid-19 crisis was discussed at the online meeting of the Bureau of the OSCE Parliamentary Assembly (OSCE PA). The meeting emphasized that in the difficult period of restricted movement, every effort should be made to continue the work of the OSCE PA as an important multilateral platform, including coordination between the legislative and executive branches of government.

The experience of the past years has shown that the OSCE PA is not only a representative multilateral forum uniting parliamentary delegations from 57 countries on the axis from Vancouver to Vladivostok, but provides effective tools to contribute to solving specific political and socio-economic problems. Among the important functions are to organize the monitoring and observation of elections, to participate in resolving local conflicts, to mitigate migration crises, to prevent terrorist threats, and to fight corruption and cyberthreats.

It should be noted that not so long ago an interesting interdisciplinary body was formed within the OSCE PA. On the initiative of 17 delegations of the OSCE PA member states in Minsk, a Silk Road Support Group (SRG) was established under the OSCE PA in July 2017. Today, the Group includes 25 delegations representing Western and Eastern Europe, South-West and Central Asia.

Both the Group's leaders and delegations members have consistently emphasized that the Group is not a 'promoter' of China's Belt and Road Initiative, but aims to create a representative, legitimate communication platform for the exchange of information and experience among the delegations of countries interested in developing multilateral cooperation between West and East based on the symbolic model of the historical Silk Road. It should also be noted that China, not

being a member of the OSCE PA, is thus not a member of the SRG.

Within the framework of the Group's activities and upon initiative of the delegations of the OSCE PA member states, conferences were organized in Baku, Vienna, Minsk and Andermatt (Switzerland). At each of these conferences, the host country tried not only to demonstrate its own investment potential and economic advantages, but also to identify its national 'New Silk Road', with which it could later be integrated into the global Eurasian initiative.

It is noteworthy that all of the past conferences were attended by representatives of the executive branch at the level of ministers of foreign affairs and economy, as well as by heads of big national companies. This shows that most countries, including Western Europe, are not opposed to the New Silk Road and are interested in creating global channels of interaction between Europe and Asia so long as those are founded on terms of equality and non-discrimination.

The role of a so-called 'guarantor' could be assumed by the SRG OSCE PA, focusing on the creation of mechanisms for multilateral coordination, monitoring, and regular exchange of information on the organization of interdisciplinary events involving representatives of the executive and legislative branches of government, businesses, and the expert community.

The OSCE PA, as an organization with experience in monitoring processes, broad multiparty representation, the ability to influence international public opinion as well as the decision-making of executive authorities through parliamentary mechanisms, is best suited for this role.

The predicted severe and long-lasting crisis of the world economy will require new non-standard intercountry instruments and channels of interaction between different regions of the world. The renewed 'New Silk Road' may become one of the models of multilateral cooperation, offering a new agenda of economic and socio-cultural relations between the so-called developed and developing countries.

With the Participation of Alexandra Furio, University of St. Gallen

CHINAPLAS 2021

Plastic packaging still confronting sustainability challenges



The coronavirus has only helped to underscore the importance of plastic packaging when it comes to keeping food contamination-free and to preserving its freshness and usability for longer. This is particularly vital now, given how millions of people worldwide are sheltering in place, and doing their best to make their provisions stretch.

But the COVID-19 pandemic has also accelerated another trend that has a major impact on product packaging – e-commerce. Online shopping already was showing strong growth, but the current stay-at-home phenomenon has only increased demand. An even broader awakening to the convenience of delivery to your doorstep may forever reshape parts of the retail sector.

In North America, it reported, the number of online orders for web-only online retailers soared 52% year-over-year in the United States and Canada for the period of March 22 through April 4, according to an online tracker from marketing platform GoodData. Revenue for web-only retailers in the U.S. and Canada was up 30% year-over-year for the period.

In the Asia-Pacific (APAC) region during the same two-week

period, year-over-year transactions for web-only retailers grew by 23%, according to Emarsys/GoodData. During the same period, year-over-year revenue was up 19% in the region.

E-commerce growing sharply

Virus or not, retail e-commerce is rising sharply. New York-based consumer research firm Statista Inc. said that U.S. online retail sales of physical goods amounted to \$365.2 billion in 2019, and projects that will rise to nearly \$600 billion in 2024.

Consider also that China's annual, 24-hour online shopping spree known as Single's Day – last held on Nov. 11, 2019 – generated record sales estimated at some \$38 billion.

The darker side of such a sales boom relates to the impact on the environment of so

much product packaging. China's State Post Bureau reported that e-commerce giants delivered 1.88 billion packages from Nov. 11 to Nov. 16 last year, an annual increase of almost 26%. Greenpeace estimated that the waste generated exceeded 250,000 tonnes.

The volume of packaging material used by China's e-commerce and express delivery sectors hit 9.4 million tonnes last year, and is on course to more than quadruple to 41.3 million tonnes by 2025 if they keep up the rate of increase, according to Greenpeace and other non-government bodies.

Sustainability still important

So, booming e-commerce offers sales growth for key sectors as well as greater convenience (and safety) now for many, but it clearly comes at a cost. While public health trumps sustainability concerns at the moment, it's clear that the packaging sector cannot afford to take its collective eye off the ball when it comes to being eco-conscious.

As Dow Inc. CEO Jim Fitterling mentioned in ANTEC 2020 virtual conference on March 31: 'The COVID-19 crisis is going to end, but the air we breathe, our water and the land we live on is here forever. And we can't afford to lose the momentum that we've started to gain already to safeguard the environment and help us move to a more circular economy.'

Leaders in the European Union also are concerned that the current virus-driven economic slump will cause the focus on sustainability to wane, writing in a joint statement in mid-April, 'We should withstand the temptations of short-term solutions in response to the present crisis that risk locking the EU in a fossil fuel economy for decades to come.'

These conditions offer both extreme challenges and enormous opportunities for brand owners, consumer packaged goods (CPG) companies, and for those designing and manufacturing the packaging.

Multiple approaches being pursued

Such firms are exploring and advancing multiple strategies to address these issues, including increased plastics recycling, more reusable packaging, greater use of biomaterials, reduced material use, and design for circularity. Package designers also need to take into account the different priorities for on-shelf vs. e-commerce products. Eye-catching package design is less vital for products sold online than in the store, but ensuring the shipped product arrives at its destination undamaged is vital.

Advances in these areas take diverse forms, but consider the efforts being by CPGs to redesign the e-commerce-friendly and highly popular – but largely unrecyclable – flexible pouches to make them more eco-friendly. This mostly involves finding a way to convert those pouches' multilayer, multimaterial constructions, which till now have been needed to protect the contents from such unwelcome factors such as moisture, oxygen, and ultraviolet light, into recyclable, mono-material structures.

For example: mono-material pouches

Several advances are happening in this area. Austria's Mondi Group, for just one example, worked with several partners for four years to develop an all-polyethylene, stand-up pouch for Germany's Werner & Mertz GmbH to use with its Frosch-brand detergent. This patented pouch features detachable decorative panels on both sides, to help enable easier recycling.

Another new technology, called AeroFlex and developed by Procter & Gamble Co., enables liquid packaging in a flexible yet rigid package. Made with coextruded flexible film, the product leverages compressed air to inflate specific portions of the pouch, specifically along the edges, to bring a degree of rigidity not otherwise possible in a flexible package.

An AeroFlex package uses half the plastic needed to blow mold a traditional bottle and can be delivered as roll stock to a filling facility, meaning it is easier to ship throughout the supply chain. In addition to significantly reducing plastic at the source, the Chicago-based company's vision is to be 100% recycle ready by 2025. While enabling seamless, edge-to-edge artwork, AeroFlex also features a no-leak, self-sealing valve that offers easy, one-handed operation by the consumer.

Loop platform touts reusability

New Jersey recycler TerraCycle Inc., meanwhile, is taking a completely different approach with its Loop circular shopping platform. Loop has gained support from many of the world's best-known brands, ranging from Unilever, PepsiCo, and Nestlé to Danone, Procter & Gamble, and UPS.

The Loop system uses UPS to ship a variety of food, household cleaning, and personal-care products in a reusable and collapsible, padded container called the Loop tote. The products are dispensed from reusable containers, which are returned in the same reusable tote when empty. Some have dubbed it 'the milk-

man model,' in a nod to the old days when milk was delivered to your doorstep in glass bottles, which were later collected, cleaned, and reused.

'Loop,' maintains TerraCycle founder and CEO Tom Szaky, 'is an engine for CPGs to shift from disposable products that consumers own to durable ones they borrow.' The brand owners, meanwhile, actually own the package, which is meant to be reused at least 100 times. The impact on packaging is obvious – instead of trying to make the cheapest possible disposable package or container, the brands are incentivized to design hand-some, reusable containers out of durable materials.

Numerous companies are also investing in initiatives and technologies to advance both mechanical and chemical recycling, and to develop biocompatible and compostable materials.

CHINAPLAS is further postponed to April 13-16, 2021 to be held in the Shenzhen World Exhibition & Convention Center, PR China. Focusing on 'Smart Manufacturing', 'Innovative Materials', and 'Green & Circular Solutions', the organizer is expect to present 400,000 square meters of exhibition space.

CHINAPLAS 2021 is organized by Adsale Exhibition Services Ltd., Beijing Yazhan Exhibition Services Ltd., and Adsale Exhibition Services (Shanghai) Ltd. and co-organized by China National Light Industry Council – China Plastics Processing Industry Association, China Plastics Machinery Industry Association, Guangdong Plastics Industry Association, Messe Düsseldorf China Ltd., the Plastic Trade Association of Shanghai. The event is also supported by various plastics and rubber associations in China and abroad.

First introduced in 1983, CHINAPLAS has been approved by UFI (The Global Association of the Exhibition Industry) since 2006. CHINAPLAS is exclusively sponsored by the Europe's Association for Plastics and Rubber Machinery Manufacturers (EUROMAP) in China for the 31st time. CHINAPLAS is currently Asia's leading plastics and rubber trade fair.

ILA Goes Digital

The world's first digital aerospace show

As the world's longest-running aerospace show ILA has always stood for innovation and leadership in this high-tech industry. In these times in which due to the coronavirus pandemic all large events have been banned, ILA is charting a new course. Starting on 13 May, as the world's first digital aerospace show, ILA will provide fascinating and forward-looking online content that reflects the dynamic developments and innovative drive of the industry.

Thus, the fascinating world of aerospace can also be experienced from afar. Every Wednesday from 13 May until the end of July the latest digital content will be available on the ILA Goes Digital website.

The wide-ranging programme targets the key ILA topics of innovation, sustainability and digitalisation, the driving forces of future technologies in aerospace. Discussions will look at how to navigate the path towards carbon-neutral aviation, smart factories and cybersecurity, for example.

Whether for decision-makers from politics, business, science, research, companies, or industry newcomers and fans of aviation, ILA has always been a platform for exchanging ideas and networking in order to keep in

touch with the technological future of the industry.

This is an important function it will also fulfil in digital form. At ILA Goes Digital the focus will be just as much on interviews with industry experts, webinars and presentations of innovative technology as it will be on matchmaking. Attendees can join the discussion and make contact under the hashtags #ILAgoesDigital, #AeroSpaceInsights and #WeAreAviation.

Particularly in these difficult times, being able to exchange information on specialist subjects and on a personal level is more important than ever, in order to drive forward innovation and help shape the future of the aerospace industry.





For transporting infants

Ansats to be equipped with special modules

Kazan Helicopters (part of Russian Helicopters/Rostec) received a permission from the Russian Federal Air Transport Agency (Rosaviatsiya) to equip Ansat helicopters with a special module for transporting neonatal patients. This equipment can be used to provide evacuation and airborne medical care to infants.



Ansats equipped with the neonatal transport module passed whole range of necessary certification tests. During the ground testing stage, the certification team demonstrated the capabilities of

the model to conduct emergency evacuation of the crew, medical workers and a neonatal patient. Flight tests evaluated the performance of the module and verified its electromagnetic compatibility

with the standard equipment of the helicopter.

The new module was developed together with the Ural Optical and Mechanical Plant (part of Shvabe holding company) specifically for neonatal air transport. The manufacturer of the Ansat medical module, Kazan Aggregate Plant, developed a special platform for the incubator to replace the more traditional stretcher design. No redesign of the helicopter interior was required.

'The capability to install a neonatal medical module for Ansat had been in demand for a long time. Thanks to cooperation of Rostec holding companies and other partners, the helicopter now comes with upgraded equipment, allowing medical teams to continuously monitor the condition of a child, maintain the vital body functions and conduct intensive therapy during the flight,' said Managing Director of Kazan Helicopters Yuri Pustovogorov.

The incubator comes with a set of medical equipment, including an artificial lung venti-

lator, a monitoring unit, an aspirator, and an infusion pump. The neonatal module can be installed optionally on all Ansats equipped with base medical modules.

Ansats helicopters are used for rescue operations in various regions of Russia, the geography of their application is constantly expanding. The development program of the Russian air ambulance fleet has been in implementation since 2017 and is now part of the National Healthcare project.

Ansats is a light multipurpose twin-engine helicopter, serial production of which is deployed at Kazan Helicopters. According to the helicopter certificate, its design allows converting it into a cargo version or into a passenger rotorcraft that can lift up to seven people. In May 2015, a supplement to the type certificate for the modification of the helicopter with a medical module was obtained. Ansats is certified for use in the temperatures ranging between -45°C and +50°C, and in high mountains.

UAALF & CAAS 2021

2nd edition of Uzbekistan Airports Aviation Forum co-located with Central Asia Aerospace Summit

After the resounding success of the first edition of the Uzbekistan Airports Aviation Forum (UAALF), The second edition of UAALF co-located with The Central Asia Aerospace Summit (CAAS) will be organized on the 3rd and 4th of March 2021 at the Tashkent city congress hall.

Central Asia has been the rising star of the aerospace industry over the last decade bolstered by a natural strategic location and concerted efforts from operators and governments to foster the market. Central Asia's growth is fueled by passenger numbers and a clear movement of the global center of activity. The Central Asia Aerospace Summit (CAAS) co-located with the Uzbekistan Airports Aviation Forum taking place on 3rd and 4th of March at TASHKENT CITY CONGRESS HALL is the ideal location for the industry to take advantage

of the associated growth opportunities.

It is estimated by 2037, the Central Asia and Caucasus market will reach 501 million passengers achieved by a CAGR of 4.4%. Industry sources predict that by 2023 Central Asia based hubs will be in the top 15 Mega Aviation Cities, with Uzbekistan taking the top position.

To attain this status, the Uzbekistan is investing in infrastructure, a trend that is seen across the whole central Asia and Caucasus region. Reports suggest there were USD\$50 billion worth of aerospace invest-

ments underway in 2019; from new airports in Uzbekistan to upgrades in regions air traffic/security control systems.

As growth in passenger movements continues to grow across the Central Asia and Caucasus, increasingly technology has been implemented to manage the progression. It is not the only technology the Central Asian countries has implemented to manage passenger and traffic movements. They have invested in the Hub Monitor system to allow all departments involved in an aircraft's movement to track its progress and turn around.

'It is clear that the aerospace industry in the Uzbekistan and Central Asia is on the cusp of incredible growth. When you look at the potential for businesses, it's no wonder that next

year's 3rd and 4th of March 2021 UAALF Co-located with CAAS is expecting a large number of new exhibitors from around the world. The show really will be the best global platform for the aerospace industry, and business in the region places a premium on face to face networking, making UAALF/CAAS 2021 show a truly unmissable event.'

New exhibitors to the event will include technology and solutions focused companies ready to drive the industry forward. A total of 130 exhibitors are expected to the event, attracting up to 8000 trade attendees across the two days. The growth in representation from around the world demonstrates the interest from all sectors of the industry and global reach of UAALF Co-located with CAAS.

CHINAPLAS 2020

The plastic industry paving the way for rebound



The Chinese industries have been normalizing operations as the spread of the coronavirus was slowing down. Indeed, the plastics industry, among others, has to stay positive and prepare for the expected market rebound after the epidemic. As the leading industry trade show CHINAPLAS was confirmed to be rescheduled to early August, many of the exhibitors are already planning to strengthen their presence at the upcoming show. The official media of CHINAPLAS, CPRJ, has recently released the news about the resumption of operations and some exhibitors' responses.

A resumption rate exceeding 50%

Most provinces across China have returned to work after an extended holiday. The National Development and Reform Commission stated that in some major economic provinces such as Guangdong, Jiangsu, and Shanghai, the resumption rate of industrial enterprises above designated size exceeded 50%.

Large enterprises are relatively quick to resume work and production compared with small and medium-sized enterprises. Upstream industries and technology-intensive enterprises are faster than downstream industries and labor-intensive enterprises.

Meanwhile, governments at all levels have promulgated a number of policies to proactively coordinating the resumption of production and work of

enterprises, ensuring the stable economic development. For instance, Beijing has introduced comprehensive financial support measures, Shanghai has set up tax reduction and exemption targets, and Guangzhou has also launched work and production resumption policies.

LANXESS: The plastics industry may rebound quickly

Most of the production bases of LANXESS in China have resumed production since February 10 in accordance with the prevention and control actions of the Chinese central and local governments. Under the circumstances, LANXESS has been doing best to minimize the impacts of the coronavirus epidemic on the company and its business partners.

'At this point it is difficult to provide a reliable outlook into

the second half. We believe that business may rebound quickly once the situation is controlled and are already planning accordingly,' Ulf Dressler Vice President, Corporate Communications APAC at LANXESS commented. LANXESS welcomes the decision to reschedule CHINAPLAS 2020, which is "in line with the company's policy to place the safety of its employees and business partners first".

Clariant: To showcase more applications for medical and protective products

Darren Soo, Head of Sales Asia Pacific at Clariant, said that the impacts of the epidemic on the plastics industry are heavy. Nevertheless, he agreed that huge consumer demands will be coming after the epidemic is over.

In addition to latest products such as halogen-free flame retardant and high performance additives, Darren Soo unveiled that Clariant will also showcase more applications for medical and protective products at CHINAPLAS 2020.

Clariant has approx. 1,400 employees across 16 locations in China. Since Clariant has no

production sites or offices in Wuhan or the Hubei province, there is no significant impact at this moment.

The company is strictly following the latest instructions from the Chinese government on both traveling and employment-related arrangements. It has installed a travel ban to Hubei Province in China. Furthermore, all global travel from and to China (including Hong Kong) was also banned.

JCTIMES: Innovative technologies and medical products the key trends

'According to the recent assessment, the lack of medical supplies such as masks and isolation clothing has been boosting the production capacity of the corresponding downstream breathable membranes and non-woven fabrics manufacturers,' Liang Bin, President of JCTIMES, said.

JCTIMES sold more than a dozen sets of breathable film die and meltblown non-woven die in the last few days. Liang Bin is optimistic about the market rebound. He believes that the medical industry will have huge potential after the coronavirus epidemic is over.

'For the plastics industry, as long as we continue to upgrade equipment and products and focus on services, the competition is ourselves,' he remarked. Expecting innovative technologies and medical products the key trends of the industry, JCTIMES will showcase more latest medical-related technologies and products at CHINAPLAS 2020.

Well-Lih: Medical consumables and packaging sectors to have 'significant growth'

Qiu Hongli, Chairman of Ningbo Well-Lih Robots Technology Co., Ltd. expressed his understanding

to the postponement of CHINAPLAS 2020.

He particularly mentioned that there will be a 'significant growth' in the medical consumables and packaging sectors after the epidemic is over. At the same time, the demands for automation and smart manufacturing will also increase.

Coperion Nanjing: The short-term difficulties will be resolved

CHINAPLAS is the only trade show that Coperion (Nanjing) Machinery Co., Ltd. joins every year. The Chinese operations for the extruder maker Coperion will have a booth area of 180sqm this year.

'Our main concern for the new show date is the high tem-

perature in August, which will be a challenge to the comfort of the exhibition halls. And it is relatively close to the 2021 show,' Joanne Shen, Managing Director of Coperion Nanjing commented.

During the epidemic, many of the company's customers have been actively participating in the production of medical supplies such as goggles and masks.

'The epidemic will pass anyway, and the short-term difficulties will be resolved,' she said. 'Local customers are well aware of the delay in delivery, and the project delivery time of large import equipment is not seriously affected. For export projects, we need to explain to overseas customers in more details.'



UFI Approved Event **Chinaplas 2020**
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3-6 августа
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SONGAR brand

Turkey's first national armed drone system

Songar, the first national armed drone system to be developed by ASISGUARD, has been delivered to the Turkish Armed Forces (TAF) after the successful completion of acceptance tests. Equipped with advanced features, Songar will undertake critical tasks in operations conducted by both TAF and the security forces.

Equipped with an automatic machine gun, Songar can carry out operations within a 3-kilometre radius. The system can transfer images in real time and carry 200 rounds of 5.56x45 mm NATO ammunition. The drone features a specially designed flexible ammunition feed chute (ammunition belt) and an automatic firing mechanism, and can operate at altitudes of 2,800 metres.

Stating that they have been working hard to develop the system solutions required by Turkey and the rest of the world, Ayhan Sunar, General Manager at ASISGUARD, underlined that the Songar system is currently unique, saying: 'As one of the most prominent drone systems in our product family, Songar can undertake many critical tasks, including locating the target area, eliminating the threat, transferring real-time images and carrying out post-operation damage assessment. It stands out as one of the leading national capabilities in asymmetric warfare as a result of its firing accuracy.'

Songar developed with unique systems

Launched for the first time at IDEF 19, Songar is undergoing continuous improvement through intensive efforts. It has achieved further success in field tests after the integration of a grenade launcher in place of the machine gun, and its firing

precision has been significantly improved with the inclusion of an 'Electronic Sight and Ballistic Calculation Module', specially designed by ASISGUARDTM. National and international patent applications have been made for Songar's unique stabilisation system.

ASISGUARDTM develops systems, subsystems, hardware and software in for military land vehicle electronics; autonomous micro, mini and medium-class UAVs; electro-optics; border security; artificial intelligence; and big data.

About Asis Elektronik

Operating in the Defence, Smart Cities, Financial Technologies and Cyber Security sectors, Asis Elektronik ve Bilişim Sistemleri A.Ş. is a Turkish company that operates with 100 percent domestic capital, and that manufactures all of its systems and equipment using its own resources. In 2017, the company underwent a restructuring in order to create added value within the defence, cyber security and financial technology sectors, taking advantage of its know-how and experience in the field of advanced technology.

In order to achieve its vision and targets, it launched the ASISGUARDTM registered trademark in the field of defence in 2018. In April 2019, it purchased 51 percent of the shares of ZEMANA, a company operating in the field of cyber secu-



Drone Strike Systems, Electro-Optical Imaging and Border Security Systems.

Using its in-house advanced technologies, Asis Elektronik is taking firm steps to become a global brand by combining its experience in 'Smart Technology Management' with the solutions it has developed in the fields of Defence, Cyber Security, City Technologies and Financial Technologies.

ASISGUARDTM develops system solutions, some of which are unique in Turkey, in the fields of Military Vehicle Electronics, Armed Drone Systems, Micro





Practical utility of digitalisation

Data themed around the tool ensure transparent production



Annedore Bose-Munde

High-precision tools have a key function in digital production operations. Application-tailored integration into the production sequences and purposeful processing of the tool data are the basis for up-to-the-future Industry 4.0 solutions. The digitalisation of production processes plays an important role for every company that wants to operate successfully on the market. Since the tool with its specific data is in metal-cutting machining a crucial constituent of the process chain, it has to fit in with the digital production environment. All digital options have to be rigorously implemented – from the tool itself, then the tool-holder, including the clamping operation and balancing, all the way through to tool presetting and deployment on the machine, is how Andreas Haimer, General Manager of Haimer GmbH, Igenhausen, summarises the spectrum involved.

One important approach in this context is the provision of digital services by tool manufacturers for their customers, e.g. by ensuring that all tool data can be retrieved online. According to Andreas Haimer, moreover, a tool management solution that enables a digital workflow of the tool data is crucial. This means: the software has to be able to integrate the entire tool environment – shrink-fitting, balancing, presetting – into the digital process and render it automatable.

One thing is certain: digitalisation is transforming the entire production sequence. With the aid of tool data stored in memo-

ry, the entire manufacturing process can be simulated and optimised in advance. Storage systems are often connected, too, and the location of each individual tool can be tracked. 'The bottom line is that thanks to digitalisation in their production operations companies save time, money and resources,' says Bernd Schwenning, Technical Sales Manager at E. Zoller GmbH & Co. KG, Pleidelsheim, a member of the GTDE association (Graphical Tool Data Exchange – Standard Open Base), which has taken on board the issue of data exchange under the aegis of the VDMA's Precision Tools Association.

The foundation for every automation process is always the tool data, which meanwhile subsume much more than merely the geometrical data. Besides machine-specific data, these include, for example, the remaining service lifetime available, or the storage location or magazine space on the machine. 'These data are, of course, available worldwide, if the company so desires,' adds Bernd Schwenning. It must, moreover, be assumed that the data inside a company are increasing-

ly being exchanged beyond the boundaries of individual facilities. 'That a purchase order is triggered at a tool vendor when stock levels in a production plant fall below a minimum inventory is, of course, only a minor aspect here, but one that's already in actual use.

'In digital production operations, too, the metal-cutting process as such is still crucially influenced by the tool in terms of component quality and cost-efficiency. The tool thus remains a crucial factor for success in metal-cutting production operations,' adds Dr. Steffen Lang, who heads the Service Division at Gühring KG in Albstadt.

The digital integration of metal-cutting machines enables the performative capabilities and the current status of the tool deployed in the machine to be acquired far more precisely than hitherto. Thanks to the resultant transparency, the entire logistics for tool supply to the machine can be optimised. Dr. Lang summarises the extent of an automated tool provision feature: 'This begins with presetting of the tools actually required at the machines, which are mounted and adjusted in the optimal sequence. It continues with consumption monitoring of the inventory levels and acquisition of service lifetime changes and factoring them directly into further tool plan-



ning. And finally the consumption and performance data are forwarded to the vendors, so as to optimise the tool's performance and supply.

In this context, Gühring offers a machine interfacing concept that enables the machine status and technological process parameters like spindle speed and torque, plus forces of the feed axes, to be acquired. Moreover, the machine data can be acquired directly in the production process, and on this basis the metal-cutting process can be immediately optimised.

Solutions for digitalisation in the tool environment

In order to progress digitalisation, moreover, the company has developed for its products a tool management software package of its own that executes and organises the exchange of setpoint and actual values, and other tool data, between the individual stations in the tool room and the company's network. Haimer's devices from the Industry 4.0 series, moreover, can be automated using modern digital features and interfaces.

For Zoller, the paramount focus is on holistic tool data handling. The company's setting and measuring devices determine the requisite tool geometry data, and edit them so that the machine tool can read them in. 'Even for this step of data transfer, we offer a wide range of highly disparate solutions for every size of firm. The data can be both entered manually and transmitted

over a network or an RFID chip,' reports Bernd Schwenning. The tool management capability subsumes not only the organisation of tool storage, but also evaluation options, e.g. for service lifetime or costs of tool utilisation, broken down into a specific order or even a specific component. 'Our goal is always to generate maximised transparency in the entire tool context, so as to optimise the production sequences involved and render them faster and more cost-efficient,' says Bernd Schwenning.

But users, too, have to engage with the issue of digitalisation. For new investments, in particular, companies should take care to ensure that every element in the tool's environment has Industry 4.0 capability and can be integrated into the digital workflow. A tool should, for example, be unambiguously identifiable using RFID data chips or using QR or data matrix codes, and through this detection capability supply further tool data like Article Number or 3D models,' says Andreas Haimer, citing specific key data. Bernd Schwenning adds: 'The most important factor for optimal tool deployment is properly updated tool data. Without tool data, the entire sequence is inconceivable: neither digitally aided inventory management nor the retrieval of metrological programs nor reading tool data into the machine.' This first step, of course, he admits, is tediously hard work, but it does offer the

requisite foundations for corporate survival in the future.

Online monitoring of the machine parameters determinant for the metal-cutting process, like torque and power consumption of the spindle, feed forces of the axes, etc. enables tool utilisation to be optimised or the dimensioning of the tool to be rendered more suitable for the machining job involved. 'Both provide the user with an option for raising his productivity more selectively. It's important for him to know and exploit these advantages of machine interfacing, so as to upgrade his competitiveness,' emphasises Dr. Steffen Lang.

At the METAV, the exhibitors will in the context of tool utilisation also be presenting disparate solutions in digital pro-

duction operations. For instance, Haimer will be showcasing its concepts in regard to the digitalisation of tool presetting, networking and concatenation of systems. Moreover, the company will be presenting many new tools and holders, and in its role as a complete-system vendor for everything to do with machine tools be spotlighting at the fair the very latest shrink-fit, balancing and presetting devices.

Zoller will be showcasing solutions for measuring and managing tools, and for tool data management. This involves metrology, software and services that guarantee complete-system solutions for adjusting, measuring, testing and managing metal-cutting tools. In addition, the

company provides information on automation solutions that support daily tool handling for enhanced process reliability. On the Gühring company's stand, the machine's interfacing with the tool management software and the evaluation of machine data acquired will be on show live on the spot on a CNC machine. Further exhibits from the Gühring company will be new drills and metal-cutting concepts for the field of e-mobility.

METAV 2020 – 21st International Trade Fair for Metalworking Technologies displays the full spectrum of manufacturing technology. The focus is on machine tools, manufacturing systems, precision tools, automated material flows, computer technology, industrial



electronics and accessories. Added to this are new topics such as Moulding, Medical, Additive Manufacturing and Quality. They are firmly established in so-called Areas in the METAV exhibition programme, each with its own nomenclature. The target group of METAV visitors includes all branches of industry that process metals, in particular mechanical and plant engineering, the automotive and supply industry, the aerospace sector, the electrical industry, energy and medical technology, tool and mould making as well as metalworking and trades. The VDMA Precision Tools Association is the institutional patron of METAV and is responsible for planning the tools exhibition area.

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Mi-38 helicopter

Rostec delivers the first serial produced to client

Russian Helicopters Holding Company (part of Rostec State Corporation) delivered the first serial produced Mi-38 helicopter with a highly comfortable cabin to its client, Gazprombank Leasing Company. The helicopter, built by Kazan Helicopters, will be operated by Russian Helicopter Systems (RHS). The delivery ceremony for the first serial Mi-38 was held at the Kazan Helicopters facility. The ceremony was attended by the President of the Republic of Tatarstan Rustam Minnikhanov, Director General of the Russian Helicopters Andrei Boginsky, as well as Director General of Kazan Helicopters Yuri Pustovgarov.

'The newest Mi-38 is a multi-purpose helicopter that will fill the empty niche between medium Mi-8 and heavy Mi-26 models. It can be used for transportation of cargo and passengers, search and rescue operations, and as a flying hospital or an offshore helicopter for delivering specialists to oil production platforms at sea. The first serial produced machine will be used for business class transportation. We have already demonstrated this helicopter with highly comfortable cabin to the leaders of Russia and foreign countries. The superior flight performance characteristics and competitive price will guarantee that Mi-38 will find its place in the helicopter fleet of Russia, our partners in the Middle East, Southeast Asia, Latin America and other regions,' said the Industrial Director of Rostec Aviation Cluster Anatoly Serdyukov.

'The delivery of the first serial Mi-38 is an important step,

confirming that Kazan Helicopters is ready to serial delivery of this type of machine for both commercial operators and governments. The demand forecast of potential buyers for Mi-38 by 2030 is more than 100 aircraft,' said the Director General of Russian Helicopters Andrei Boginsky.

The Director General of Kazan Helicopters Yuri Pustovgarov handed a symbolic key to the new Mi-38 helicopter to the CEO of RHS Mikhail Kazachkov. The helicopter with a highly comfortable cabin is designed to carry up to 10 people.

The first serial Mi-38 helicopter was introduced to the general public at MAK-2019 Moscow Air Show, where it was demonstrated to the President of Russia Vladimir Putin and the President of Turkey Tayyip Recep Erdoğan. Mi-38's foreign debut took place during the Dubai Airshow 2019, where the head of the Russian Ministry of Industry and Trade

Denis Manturov showed it to the Crown Prince of the Emirate of Abu Dhabi, Sheikh Mohammed bin Zayed Al Nahyan.

'We are glad to continue our cooperation with Russian Helicopters and implement another deal – financing the production of Mi-38 in the framework of the previously signed cooperation agreement. Renovation of aircraft fleets requires high capital investments, and leasing allows you to divide the cost of expensive asset acquisitions into long periods comparable with the life of the asset, making it undoubtedly an effective financial tool in solving such problems. Together with Gazprombank, we see good prospects for leasing aircraft and, in particular, helicopters. We have the capability and resources to finance the renewal of fleets of both commercial and federal subjects in the Russian Federation,' commented the CEO of Gazprombank Leasing Maxim Agadzhanov.

During the ceremony, employees of Kazan Helicopters were awarded for their active participation in the production of Mi-38 and a significant contribution to the development of domestic helicopter construction. Employees of the enterprise were awarded the title of Honored Mechanical Engineers of the Republic of Tatarstan, and also received honorary di-

plomas of the Ministry of Industry and Trade of the Russian Federation, Rostec State Corporation and Russian Helicopters Holding Company.

The design of Mi-38 consists of a single-rotor scheme and a twin-engine power plant with high power and economic performance. The main structural elements of the fuselage are made of aluminum alloys, individual components and parts are made of steel, titanium and composite materials. The helicopter uses two Russian-made TV7-117V engines, equipped with dust protection devices with a high degree of air purification. An advanced six-blade rotor provides high thrust and low vibration levels. The blades are equipped with an anti-icing system, and the X-shaped tail rotor gives the helicopter excellent handling with low noise level.

Mi-38 is equipped with a modern navigation system and satellite navigation system. The cockpit of the helicopter is equipped with five versatile LCD color screens to ensure the effective display of information. The flight range of the new helicopter is up to 1,200 kilometers (with additional fuel tanks). With its maximum take-off weight of 15.6 tonnes, the helicopter can carry 5 tonnes of payload on board or on an external sling.

Covid-19: Statement by Deutsche Messe on the current situation concerning HANNOVER MESSE

Dr. Jochen Köckler, Chairman of the Deutsche Messe Managing Board: 'We are taking all developments concerning the coronavirus (Covid-19) very seriously. We are in close contact with the responsible health authorities, the HANNOVER MESSE Exhibitor Advisory Committee and our partner associations VDMA and ZVEI. On 25 February we held a meeting with the Executive Board of the Exhibitor Advisory Committee and the associations to discuss the current situation. All participants agreed

that it is too early at this point to decide on postponing HANNOVER MESSE. We have received no substantial cancellations from exhibitors at the event, which opens its doors on April 20. We will be conducting further discussions with the health authorities this week to decide on the kind of measures that need to be implemented at HANNOVER MESSE.

Developments in Europe and the postponement of individual trade fairs in Germany however reveal that the situation

can change from day to day. In that regard, we will continue to monitor and discuss the situation intensively – with the aim of re-evaluating the situation together with the health authorities and the Exhibitor Advisory Committee in mid-March, in week 12.

Irrespective of this, we will ensure the highest possible degree of hygiene, safety and medical care at the fair. The health and safety of all employees, customers, partners and guests enjoys the highest priority for Deutsche Messe.'

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View to HANNOVER MESSE 2020

Infrastructure solutions for powerful IIoT networks

The HARTING Technology Group will be showing off lots of new products and smart solutions at HANNOVER MESSE (20 April to 24 April 2020) again this year. And the HARTING motto for this year's HANNOVER MESSE is also 'Industrial Transformation'.

The HARTING Technology Group has been a pioneering force for innovation, major standards and industrial milestones for 75 years. The 75th anniversary will be celebrated at numerous events this year. HANNOVER MESSE in April will be the high point of all of these celebrations. The HARTING Technology Group is leading the way to industrial transformation with the claim 'All for Ethernet', setting new standards for industrial networks. Gaining in importance through the merging of the world of IT and automation, Industrial Ethernet cannot do without a reliable infrastructure fit for industry. HARTING recognised this need early on, creating in RJ Industrial* the first RJ45 interface fit for industrial applications – a milestone and still the most widely used data interface. HARTING continued pursuing the path of constant innovation and serving market needs in 2016 with the ix Industrial* interface for the familiar multi-pair ethernet. The next big step came after that: from ethernet via SPE into the field, for a smart connection of the last network participants to the IIoT.

All T1 Industrial components for your IIoT infrastructure

Published on 23 January 2020, IEC 63171-6 created the basis for all future IIoT networks – and it hasn't changed. This doesn't mean that things have stood still, but that there has been ultimate agreement over a market-wide standard for SPE infrastructure, meaning investment security for users. On this basis, a comprehensive portfolio can be developed for the single-pair ethernet market.

Serial parts for the IP20 version of the T1 Industrial interface in the field assembly format in AWG 28-22 and overmoulded AWG 28-22 will be on show for the first time ever at HANNOVER MESSE. HARTING is also presenting the corresponding device socket for a robust and standardised SPE connection with the device. Device developers will get to see the first design-in projects at the fair.

SPE Industrial Partner Network sees strong growth

The SPE Industrial Partner Network has more than doubled its

membership in just a few months. Starting with seven founding members, the number rose to 16 after the SPS fair in November 2019. Each company is a technology leader in its own right, specialising in different areas, which it needs to strengthen and complete the SPE ecosystem. This shared common basis creates the international standardisation for SPE infrastructure to IEC 11801-x, IEEE 802.3 and IEC 63171-6, to which all members refer. 2020 is the year of the SPE network. The network will be holding a series of interesting events at this year's HANNOVER MESSE.

Han S®: secure connections for modular energy storage

The Technology Group has new products for the field of heavy-duty connectors. Han S® is the new secure connection technology for modular battery storage. The compact, flexible housing has room for contacts up to 200 A. The mounting housing is freely rotating and access to the locking mechanism is intuitive. Red for plus and black for minus with additional mechanical coding makes the interfaces interchangeable.

Han S® gives users optimum security, as the design meets all technical requirements and the latest UL 4128 standards for stationary energy storage systems. This means that the new connectors meet the highest standards demanded by the market.

The use of connectors speeds up the assembly of energy storage units made of lithium-ion cells. Global demand for this type of storage battery is booming. Manufacturers are having to connect more and more cells to systems. Han S® allows for rapid and standardised contact here. This makes the new connector an optimum solution for high processing volumes. Users can also depend on the connection working securely at a high production rate.

Focus on DC connectors

For 75 years, HARTING has continually set high standards for new industrial interfaces. At present, there is a technologically demanding trend towards DC power transmission in the industrial environment, with significant growth expect-



ed for this type of power supply. In order to provide suitable installation technology for these applications, HARTING will be presenting new concepts of DC power transmission at the Hannover Fair 2020. The study of a new DC interface for industrial application will be presented, which is characterised by power and data technology. It transmits voltages up to 800 V as well as currents up to 40 A and cannot be pulled under load. In addition to the working groups of DC Industries, HARTING is also involved in drafting the DKE standards.

The project is the result of a cooperation between HARTING and the Smart Factory KL. At the Hannover Fair, future-oriented studies of the new DC interface at different levels of integration will be shown on the stands of both companies.

Extended customising functions for Han configurator

The Han® configurator for industrial interfaces has a new customising function. It allows users to use the configurator to design individual solutions for cable entry points and apply labels. When configuration is complete, although it is an 'individual' product, all design-relevant data is available for download and users can order the customised solution. The new function makes for a continuous process: this goes from design to product development, production phase and assembly, enabling customers to design products easily on their own and have them delivered within a very short time. This makes individual interfaces affordable, even in smaller volumes. The amount of time for designing a new product is reduced, just as it is by the automatic quality inspection of the design. The configurator's new customising functions ultimately increase the range of available standards for clients. HARTING is using this technology to increase its product range and will be adding more and more customising functions to the Han® configurator.

Increased cooperation with software developer PerFact

HARTING is pushing forward with the development of new technology. Announced at the SPS fair in Nuremberg in November 2019, the software partnership with PerFact is being expanded. HARTING and PerFact will be issuing more details at HANNOVER MESSE. PerFact develops professional IT solutions for industry. Linking machines via the Internet is a major aspect of remote machine maintenance.

HARTING interface delivers Power, Data, Signal for 'metroSNAP'

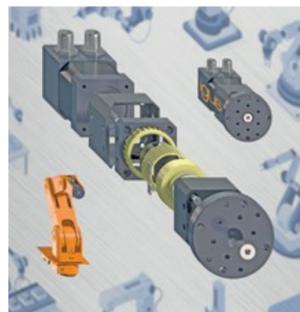
And the Swiss car maker Rinspeed will be at HANNOVER MESSE again this year. Rinspeed and HARTING are linked by a trust-based partnership going back many years. This year, the Technology Group is providing a specially designed interface to supply the vehicle with Power, Data and Signal. With 'metroSNAP', HARTING and Rinspeed are taking the next step towards mobility concepts of the future. Whether it's transporting people or goods – the vehicle is highly versatile. The HARTING module helps drivers to configure the vehicle quickly and flexibly for a wide range of tasks.

The HARTING Technology Group is one of the world's leading providers of industrial connection technology for the three lifelines of Data, Signal and Power and has 15 production plants and 44 sales companies. Moreover, the company also produces retail check-out systems, electromagnetic actuators for automotive and industrial series use, charging equipment for electric vehicles, as well as hardware and software for customers and applications in automation technology, mechanical and plant engineering, robotics and transportation engineering. In the 2018/19 business year, some 5,300 employees generated sales of EUR 750 million. Founded on September 1, 1945, the company celebrates its 75th anniversary at many trade fairs and events this year.

Igus tribo-polymers

At HANNOVER MESSE 2020 igus will show the next generation of robolink drive elements

In order to generate accurate movement along the 5th robot axis, the motion plastics specialist igus has developed new types of strain wave gears based on its tribo-polymer technology. Due to the use of lubrication-free high-performance polymers, they are not only extremely compact and light but also require very little maintenance and have an especially long service life. The latest generation supplements the gearbox series from igus and is part of the continually growing range of products for Low Cost Automation.



Tribo-polymers are used wherever the goal is an improvement of technical performance and a simultaneous reduction of costs. The advantages of tribo-polymers are especially apparent in the case of gearboxes: due to the use of iglidur high-performance polymers, strain wave gears from igus require no additional lubrication, in contrast to metal types of gear. Friction and wear are improved if lubrication-free tribo-polymers are used. At the same time, the use of plastics enables an extremely compact design and cost-effective manufacture. As a result of active research and further development of the strain wave gear, operating smoothness, backlash and service life have been optimised further by means of improvements in the technical design and

in the selection of materials. This especially applies to the latest generation.

Strain wave gear made of lubrication-free tribo-polymers

The main components of the gearbox include a wave generator and a flexible ring with outer teeth, as well as an outer ring, fixed in place in the housing and a rotary power take-off element with inner drive teeth. The necessary flexibility and high degree of wear resistance are achieved through the use of lubrication-free high-performance igus polymers. The wave generator has an elliptical shape, therefore the surrounding flexible ring also assumes this shape. The drive teeth of the flexible ring engage at two places in the inner drive teeth of the outer ring and power take-off element. As the outer ring has two teeth more than the other components, the flexible ring is only moved two teeth further per rotation when the wave generator is rotated. Along the last axis of an articulated arm, linear robot or delta robot, the strain wave gear can be used before different gripper systems. Here, it performs the task of gripping objects that are not rotationally symmetrical and positioning them exactly. The current version is based on the installation size Nema 17 for direct connection to a stepper motor and can easily be adapted to other types of motor. The load bearing capacity of the strain wave gear has been determined in the test laboratory. With a transmission ratio of 28:1, the gearbox has a service life of 1 million cycles under a load of 1.5Nm and at a speed of 6rpm. As

a next step, there are plans to develop a size Nema 23 gearbox.

Cost-effective automation solutions now possible

Like igus worm gears and planetary gears, strain wave gears are also part of the igus Low Cost Automation product range. These products can be used to develop cost-effective and long-lasting automation solutions for small and medium-sized enterprises – such as robots that can dispense coffee in the retail trade, perform pick-and-place tasks in the electronics industry or, in future, empty a dishwasher in the home. And all this is possible at a very favourable price: for example, a five-axis robot kinematics system from the igus robolink DP series costs around 3,500 euros, due mainly to the use of plastics, whereby the investment often pays for itself within just a few months. Last year, igus worked with partners to start the platform RBTx.com, which makes it easy to put together additional components such as gripper, control system or pneumatic components in order to create a full robotics solution. The platform brings users and suppliers of low-cost robotics components together quickly and easily. Interested parties can put together a low-cost robotics solution that matches their requirements and their budget exactly.

igus GmbH is a global leading manufacturer of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 35 countries and employs 4,150 people around the world. In 2018, igus generated a turnover of 748 million euros from motion plastics, plastic components for moving applications. igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs.

Revolutionary Micro-Fulfillment Solution

Redefining the eCommerce In-Store Customer Experience

From April 20 to 24, 2020, AutoStore will present the future of retail at the Hannover Messe. To remain competitive, retailers require a presence across multiple channels – stores, online, social networking and mobile. Consumers also are demanding more choices, and are more willing to change the provider allegiance to get better value and service. Same-day delivery and immediate local-store pick-up are no longer perks for eCommerce consumers, they are expectations. With AutoStore's micro-fulfillment solution, retailers can operate an extremely efficient eCommerce sales channel including 24/7 Click & Collect service in parallel to a customer-oriented shop. In Hall 4 / booth A24 at the Hannover Fair, AutoStore will present the flexibility and scalability of its robot-operated container warehouse in order to cope with an increasing number of articles and SKU's as well as seasonal peaks in online order processing.



Modular and Scalable Solutions with the highest density in the market

Perfectly suited for consumer in-store micro-fulfillment is AutoStore®, a modular, highly-automated eCommerce fulfillment system that is compact enough to be placed almost anywhere in-store, equipped to fulfill online orders fast and efficiently.

Peter Bimmermann, Business Development Manager AutoStore System GmbH, is convinced this year AutoStore's appearance in Hannover can be remembered as a gamechanger for the industry. "With the expectation of same-day deliveries in eCommerce, fast order fulfillment is essential to deliver on customer expectations. Managing retail eCommerce fulfillment from regional distribution centers cannot accommodate the demands of today's consumers, nor can it sustain cost efficiency. The automatic micro-fulfillment solution from AutoStore retailers can replace aisles with richer in-store experiences. This will eventually change retail as we know it. We are looking forward to present the AutoStore solutions at Hannover Messe."

AutoStore provides the highest density of any automated storage and pick system. Modular in



design, its micro-fulfillment solution can easily be configured to fit different store ceiling heights and obstacles.

Click-and-Collect 24/7 or Last-Mile Delivery options

The efficient design and functionality of AutoStore's eCommerce micro-fulfillment pick-up points play a critical role in maintaining high-volume throughput for output workstations. Associates can consolidate eCommerce orders in less than 10 minutes, and put them back in the system for customers to collect at any time. And orders can be retrieved from the system in just a few minutes. Customers can decide their preferred option to collect pre-picked orders, whether

in-store, parking spot or home delivery.

Fail-saved robotics for maximum system availability

AutoStore consists of a three-dimensional aluminum grid system of self-supporting bins that are moved to pick stations by independently-operating robots, providing swift and accurate movement of orders.

Each robot has two sets of wheels that enable it to move along perpendicular axes. This makes it possible for all robots to reach any position, and any bin on the grid independently – virtually eliminating the possibility of single-point system failure, providing near 100 percent system availability.

From Online to In-Store

eCommerce fulfillment presents a significant challenge for retail stores. AutoStore's technology and extensive use-case experience is now being leveraged for extremely efficient micro-fulfillment of online orders in-store. Essentially, we have redefined the eCommerce in-store customer experience.

The AutoStore crew is looking forward to meet the media and prospective customers to present them the future of retail.

Confirm Media Attendance

Meet AutoStore at the Hannover Messe in Hall 4/Booth A24.

The AutoStore Press event will be held Tuesday April 21st, 09:00 AM at the AutoStore booth. We will serve coffee, tea and breakfast snacks.

If you want individual meetings and interviews with the AutoStore Management, this can be organized by Anja Seemann.

Please confirm your attendance or book an interview on email: autostore@anjaseemann.de

AutoStore, founded in 1996, is a robot technology company that invented, and continues to pioneer, Cube Storage Automation – the densest product/inventory storage solution in existence. The company's focus is to marry software and hardware with human abilities to create the future of warehousing. AutoStore is global, with more than 400 systems installed in 30 countries over a wide range of industries. All sales are designed, installed and serviced by a network of qualified system integrators – which AutoStore calls 'partners'. The company's headquarters is in Nedre Vats, Norway, with offices in the U.S., UK, Germany, Japan and France.

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Margrit Harting turns 75

She is not thinking of stopping any time soon

Back in the 1960s, she only knew HARTING as a manufacturer of cigarette vending machines. And young Margrit was a little wary of Espelkamp. She was always happy once she was past the nascent town as she travelled with her father from Herford to Rahden, where his schools were located. But both the company and the place went on to fit together for Margrit Harting, who turns 75 on 3 February in a very special and delightful way.



Born in Lippe and a qualified teacher of commercial subjects, she married the businessman Dietmar Harting in 1971, joined the Technology Group (founded in 1945) in 1987 and, ever since that day, has been shaping the style and image of the family owned and managed company in her roles as Manager, Senior Vice President and creative and inspiring Senior Director.

When the US President Barack Obama admired the HARTING team's sneakers at HANNOVER MESSE; whenever heads of state and ministers, VIPs from the worlds of sport, culture and the economy have come to Espelkamp, whenever anniversaries, successes and inaugurations have been celebrated in a big way, and whenever impressive architecture has been created, this superwoman has conducted proceedings with great confidence, cutting an impressive profile. Initially, on joining the company, Margrit Harting took responsibility for personnel, quality, plant facilities, advertising and PR and decided that the SME, with around 1,300 employees and sales of nearly 150 million Marks as of 1987, should have a modern and friendly image.

Initiating safety, cleanliness and sustainability competitions, the Night of Innovations, the KiTec research award for primary children, the leading-edge NAZHA training centre, as well as promoting and supporting sports, culture and education

– her influence extends well beyond the company and the region itself.

Meanwhile, her once sceptical attitude to Espelkamp has reversed and reflects passionate commitment. 'The town would definitely be poorer without her', as Espelkamp's Mayor Heinrich Vieker underlined her huge commitment back in 2009 when Dietmar and Margrit Harting were awarded honorary citizenship.

Notable in this context is the modernisation and renovation of the New Theatre, which would not have been possible without a donation of a million euros committed by the couple. In 22 years as a member of the General Assembly of the Ostwestfalen zu Bielefeld Chamber of Industry and Commerce and twelve years as its Vice President, Margrit Harting worked tirelessly in the interests of the region's economy. In 1998 she succeeded in commissioning the Swiss star architect Mario Botta to design the new sales headquarters building for HARTING Deutschland in Minden. In addition to many distinctions as Honorary President, Margrit Harting 2008 was awarded the Federal Order of Merit First Class in 2008, and an honorary fellowship of Leibniz University, Hanover in 2018.

Perfectionism and professionalism, ever new and fresh ideas, powerful motivation, enthusiasm and persuasive power distinguish the 75-year-old birthday girl. There is no question of resting on her laurels, as she has no lack of plans for the future. Especially this year, when the company, meanwhile run with great success by son Philip and daughter Maresa together with their parents, reaches the same age as the 'foreign minister' of the international Technology Group. And Margrit Harting, with her enthusiasm for performance and quality, is on hand to ensure that the event will be staged appropriately.

The HARTING Technology Group is one of the world's leading providers of industrial connection technology for the three lifelines of Data, Signal and Power and has 15 production plants and 44 sales companies. Moreover, the company also produces retail checkout systems, electromagnetic actuators for automotive and industrial series use, charging equipment for electric vehicles, as well as hardware and software for customers and applications in automation technology, mechanical and plant engineering, robotics and transportation engineering. In the 2018/19 business year, some 5,300 employees generated sales of EUR 750 million. Founded on September 1, 1945, the company celebrates its 75th anniversary at many trade fairs and events this year.

Security at the ILA 2020

Focus on hi-tech, operational capability and recruitment

How can Europe successfully deal with future threat scenarios? These and other vital issues affecting security and defense will again have an important part to play at the ILA Berlin from 13 to 17 May 2020. In addition to the German armed forces, the Bundeswehr, which is the largest exhibitor at this event, the military forces of many other countries will also be represented, with the latest aircraft and most up-to-date technology. Delegations and visitors from over one hundred countries are expected to attend the ILA. More than 200 aircraft can be seen in the air and on the display areas.

BDLI President Dirk Hoke says: 'Military aviation again plays a decisive role at the ILA. We are the driving force for innovations, in our efforts to meet the increasing contribution by the German armed forces to safeguarding democracy, security and prosperity in Europe. Our entire industry, comprising systems houses and the supply sector, a large proportion of which consists of small and medium-



sized businesses (SMEs), has at its disposal some outstanding technical skills in Germany and in Europe. These can be experienced at close quarters at the ILA – from the Eurofighter to the A400M, helicopters such as the H145, and the products and digital services of our national support industry, which makes a large and indispensable contribution to the added value of airborne platforms.'

MSC displays innovations and joint ventures

At the Military Support Center (MSC) in Hall 3 the German air force and industry are showing how they are working together to ensure that aircraft and equipment are in a constant state of readiness. The displays by systems houses show how, working in close collaboration with the air force,

they are making new technologies in the areas of digitalisation, connectivity and cyber-security available for use by the Bundeswehr. Small and medium-sized companies have a special part to play in ensuring that the armed forces are ready for action and are able to deploy the latest technological developments. As part of a complex supply chain they make a significant contribution to the efficiency of the systems, and their displays at the MSC feature their extensive ranges of products and services.

Forward-looking employers

The Bundeswehr is exhibiting at the ILA to show that it is an attractive and forward-looking employer. It offers some unique careers which are impressive for the outstanding quality of the training offered. Its remit – to protect citizens and our democracy – demands the utmost reliability and responsibility from each individual, along with teamwork and professionalism. The Chief of Staff of the Air Force, Lieutenant General Ingo Gergartz, is very impressed: 'Come to the ILA. This is where you can experience at close quarters our aircraft and the hi-tech in service with the Bundeswehr. But most importantly of all, you can get

to know the people behind it all, and the services that they provide. All of them, from our A400M pilots to our civilian staff, are part of our strong air force team. Together with the BDLI we can provide a modern air force that is always ready for action. We hope to see you at the ExpoCenter Airport, where we can promise you a varied program including flying displays, in accordance with the slogan: 'Luftwaffe feels good.'

Europe is a powerful partner of the ILA

With the European Commission the ILA 2020 has the support of an important partner. Collaboration between research and industry is closer in the aviation and space sector than it is anywhere else. In the years to come, under its new leadership the European Commission is planning to take the next steps towards a European defense union. This will enable Europe to assume greater responsibility as a global player in the international security architecture. The aim is also to achieve greater European coordination in the procurement of materials in order to create synergies and to retain and expand skill levels in key technologies in Europe. Discussions about these topics will be taking place at the highest international level at the ILA.



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CHINAPLAS 2020

Polymers Enable & Enhance Sports at Every Level



Plastics and rubber materials have revolutionized many aspects of sports and leisure activities over the years, and technology advances continue to improve safety, comfort, performance and – increasingly – sustainability, in those sectors. The applications are diverse and widespread – ranging from the balls used in games and various footwear and clothing, to protective helmets and padding, playing surfaces, and gear such as racquets, golf clubs, safety eyewear, racing bikes, skis, kayaks and surfboards.

Manufacturers and brand owners, for example, are investing significant money and effort into producing sneakers and footwear that offer style, performance and increased recyclability while also leveraging techniques such as 3D printing.

Yantai, China-based materials supplier Wanhua Chemical Group Co. Ltd. has partnered with Chinese footwear maker Peak Sports to 3D print a futuristic-looking sneaker entirely from thermoplastic polyurethane (TPU). Called 'The Next,' the colorful shoe is both customizable and totally recyclable, the two firms said when announcing it in October. Wanhua supplies TPU filament, powder and coatings and adhesive to make the shoe.

Germany's Covestro, meanwhile, is also kicking up its heels in this sector. The materials supplier is working with Chinese shoe designer Axis Liu to create trendy, recyclable sneakers entirely from TPUs, as well. The partners have also developed customized running and basketball shoes, using a number of Covestro material technologies, including its Insign-brand,

water-based PU textile coatings and adhesives, urethane foams, TPU textile fibers and films, and Maezio-brand continuous fiber-reinforced thermoplastic composites (CFRTP).

Others in that sector, such as Nike and adidas, also are finding ways to incorporate waste ocean plastics into their shoes and sportswear.

Indian start-up sports apparel company Alcis Sports, meanwhile, is making its line of athleisure clothing out of recycled PET bottles. Company co-founder



Roshan Baid told The Economic Times in India in October that the firm plans to produce half its garments from recycled polyester within the next few months. Alcis claims that each T-shirt they make, for example, consumes about eight plastic bottles, saves roughly 27 liters of water, uses half the energy to produce, and reduces carbon emissions by more than 54 percent than shirts made from virgin polyester.

Companies such as Spanish injection molder RDI Plastics use polycarbonate, ABS, expanded polystyrene and other materials to make protective helmets for use in hockey, soccer, motocross and cycling, among others.

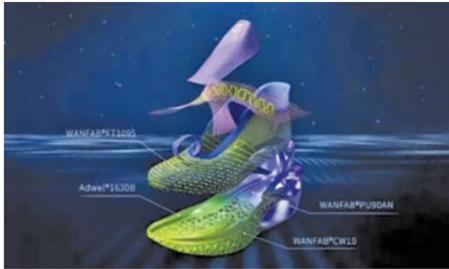
Several materials producers are very involved in supplying solutions to different parts of the sports and leisure markets. Here are just a couple examples:

DuPont Co.'s Surlin resin finds use in golf ball covers, bowling pin covers, body boards, snowshoes and other winter sports articles. Its performance polymers, such as Delrin acetal resin, Hytrel thermoplastic elastomer and Zytel nylon resin are used in snow-shoe bindings, inline skates, and various types of buckles and straps. And its Kevlar aramid fiber is used in sporting good components ranging from bicycle helmets and motorcycle clothing, to boating hulls and hiking boots.

BASF SE's polyurethane-based flooring structures find use on track surfaces and chil-

dren playgrounds. The materials help to provide high rebound and excellent impact absorption, helping athletes achieve their best performance while lowering risks of exercise-related injuries for children.

When it comes to water sports, San Francisco-based Oru Kayak Inc. has applied the traditional Japanese art of origami and used it to create a series of lightweight, foldable kayaks made from corrugated polypropylene. Its products range from 12 to 16 feet long and from 26 to 34 pounds, and fold up into a suitcase-sized case with a shoulder strap that can easily be carried by one person.



French resin supplier Arkema Group also supplies materials for use in a variety of sporting applications, including for the cockpit window and the glazing shielding the two helms of its 50-foot Arkema trimaran racing boat. For that, they used Altuglas Shield-Up nanostructured acrylic sheet, which weighs about half as much as conventional glass.

In mid-October, the University of Maine's Advanced Structures and Composites Center, in conjunction with several partners, successfully produced the world's largest 3D printed boat, entirely from carbon fiber-reinforced ABS supplied by Techmer PM LLC. Dubbed the 3Dirigo, the 25-foot-long, 5,000-pound patrol boat was printed on a 3D printer, called the MasterPrint, made by Rockford, Ill. based Ingersoll Machine Tools Inc. The effort earned the group three Guinness World Records – for the world's largest prototype

polymer 3D printer, largest solid 3D-printed object, and largest 3D-printed boat. And even the sports venues themselves are making good use of plastic materials. At the Rio 2016 Olympics in Brazil, for example, officials found a way to use millions of recycled plastic bottles to produce more than 6,700 seats in the Maracanã stadium.

There is no disputing the vital role that plastics and rubber materials play in virtually every aspect of the sporting world – which is why such applications will be among those in the spotlight at CHINAPLAS 2020 in Shanghai next April.

CHINAPLAS 2020 is organized by Adsale Exhibition Services Ltd., Beijing Yazhan Exhibition Services Ltd., and Adsale Exhibition Services (Shanghai) Ltd. and co-organized by China National Light Industry Council – China Plastics Processing Industry Association, China Plastics Machinery Industry Association, Messe Düsseldorf China Ltd., the Plastic Trade Association of Shanghai. The event is also supported by various plastics and rubber associations in China and abroad.

First introduced in 1983, CHINAPLAS has been approved by UFI (The Global Association of the Exhibition Industry) since 2006. CHINAPLAS is exclusively sponsored by the Europe's Association for Plastics and Rubber Machinery Manufacturers (EUROMAP) in China for the 31st time. CHINAPLAS is currently Asia's leading plastics and rubber trade fair.

More stability and reliability

Lufthansa Group selects wGoogle Cloud as strategic partner

Flight delays, rebookings due to missed flights and extreme weather conditions are some of the many factors that can disrupt a flight schedule. In the interests of their customers, the Lufthansa Group airlines are always keen to return to a stable flight plan as quickly as possible.

Lufthansa Group has therefore chosen Google Cloud as a strategic partner to further improve its operational performance and minimize the impact of irregularities on its passengers. The aim is to build a platform that will suggest scenarios to return to a stable flight plan in the event of an irregularity so that passengers still arrive at their destinations as punctually and comfortably as possible. This will be done by merging data from various processes that are relevant for stable operations (for example aircraft replacement and maintenance as well as crew scheduling).

'By combining Google Cloud's technology with Lufthansa Group's operational expertise, we are driving the digitization of our operation even further,' said Dr. Detlef Kayser, Member of the Executive Board of the Lufthansa Group. 'This will enable us to identify possible flight irregularities even earlier and implement countermeasures at an early stage.'

For example, flights are sometimes delayed due to weather conditions such as snowfall and passengers might miss their connect-

ing flights. In the future, it will be possible to offer faster rebooking possibilities across all four hubs for Lufthansa Group passengers thanks to systems based on artificial intelligence.

'Through this collaboration, we have a significant opportunity to revolutionize the future of airline operations,' said Thomas Kurian, CEO for Google Cloud. 'We're bringing the best of Lufthansa Group and Google Cloud together to solve airlines' biggest challenges and positively impact the travel experience of the more than 145 million passengers that fly annually with them.'

A joint team of operations experts, developers and engineers from the Lufthansa Group and software engineers from Google Cloud will be developing and testing the appropriate platform. The test launch will take place in Zurich with SWISS.

The Lufthansa Group is the world's largest aviation group in terms of turnover as well as the market leader in Europe's airline sector. The airlines of the Lufthansa Group stand for safety, quality, reliability and innovation. The

Group strives to be the 'First Choice in Aviation' for its customers, employees, shareholders and partners.

The Lufthansa Group is divided into the business segments Network Airlines, Eurowings and Aviation Services. With their premium brands Lufthansa, SWISS and Austrian Airlines, the network airlines serve the Group's domestic markets at its hubs in Frankfurt, Munich, Zurich and Vienna. In addition to several Eurowings flight operations, the Eurowings business segment also includes Brussels Airlines and SunExpress. With its secondary brand Eurowings, the Lufthansa Group offers flights in the growing market of short-haul and long-haul private travel. The Aviation Services segment includes logistics, technical services and catering. All business segments play a leading role in their respective industries.

Lufthansa Group airlines serve 270 destinations in 105 countries on four continents, offering 10,775 weekly frequencies (winter 19/20). The current fleet is comprised of 763 aircraft. In 2018, the Lufthansa Group welcomed over 142m passengers on board and generated revenue of around €35.8bn. The Lufthansa Group has currently around 138,000 employees and comprises 550 subsidiaries and associated companies.



Cooperation on smart factory projects

HARTING and Expleo Group cooperate on IoT solutions



The HARTING Technology Group and Expleo concluded a cooperation agreement at the SPS Trade Fair 2019 in Nuremberg. The agreement was signed by Philip Harting, Chairman of the Board of the HARTING Technology Group, and Peter Seidenschwang, Head of Industry at Expleo Germany GmbH. It is a reaffirmation of the long-term cooperation by the two parties in the area of data-controlled services and IoT solutions for industrial customers. HARTING is offering the modular edge computing MICA®, which has been designed according to industrial standards for multiple industrial applications, and Expleo is contributing its know-how in connectivity and data-scientific competence.

The joint memorandum of understanding by the management of both companies is the culmination of many years of successful cooperation in MICA® network, the user organisation supporting HARTING's edge computing system MICA®. Expleo has been involved in the network since 2016, working on the development of a solution for the process and operational optimisation of machines and production systems. On the basis of compiled data, the SmartANIMO application from Expleo can independently learn the standard behaviour of connected production lines and individual machines and use this know-how to identify deviations in the process without manual interventions. Detecting any upcoming problems at an early stage means that the overall efficien-

cy of the system can be improved with a focus on predictive quality or predictive maintenance. The robustness and flexibility of MICA® also enables Expleo to implement the solution in industrial environments and to retrofit



existing production systems non-invasive.

Caption: The HARTING Technology Group and Expleo Germany GmbH concluded a cooperation agreement at the SPS Trade Fair 2019 in Nuremberg. The picture shows (from left) Philip Harting, Chairman of the Board of the HARTING Technology Group, Peter Seidenschwang, Head of Industry at Expleo Germany GmbH. At the HARTING stand at the SPS 2019, Expleo's Industrie 4.0 Showcase demonstrated how production data can be compiled by the edge computing device MICA and evaluated in the SmartANIMO application.

Expleo is a trusted partner for end-to-end, integrated engineering, quality services and management consulting for digital transformation. We help businesses harness unrelenting technological change to successfully deliver innovations that will help them gain a competitive advantage and improve the everyday lives of people around the globe.

Expleo is active in the technology-intensive sectors that make business and society more connected, sustainable and secure. We offer unique access to industry-specific expertise and best practice across the following services: consultancy and business agility, product design, production and in-service support, as well as continuous quality.

Our 15,000 people bring the right balance of boldness and reliability that businesses need to succeed in this disruptive era. We are active in more than 25 countries, generating €1.1 billion in revenue in 2018.

Expleo's network of affiliate companies includes Aero-tec, Athos Aéronautique, Double Consulting, Edison Technical Recruitment, Moorhouse Consulting, SilverAtena, Stirling Dynamics, Sud Aviation Services, Trissential and Vista Technologies.

The HARTING Technology Group is one of the world's leading providers of industrial connection technology for the three lifelines of Data, Signal and Power and has 15 production plants and 44 sales companies. Moreover, the company also produces retail checkout systems, electromagnetic actuators for automotive and industrial series use, charging equipment for electric vehicles, as well as hardware and software for customers and applications in automation technology, mechanical and plant engineering, robotics and transportation engineering. In the 2018/19 business year, some 5,300 employees generated sales of EUR 750 million.

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CHINAPLAS 2020

Plastics – The Great Healthcare Enabler



Plastics save lives. Pure and simple. What often gets lost in the demonization of plastics due to their waste-related challenges is the fact that modern healthcare is heavily reliant on the material and, in fact, could barely function without it. Even those detractors who long have argued against the use of PVC, or vinyl, in various healthcare applications due to concerns over the material's use of phthalates, have failed to deter the healthcare sector's use of PVC for one simple reason – there is no alternative that can cost-effectively deliver the same level of performance. It is simply the best material for the job.

Similarly, while efforts continue to find ways to reduce plastic-related waste by increasing the reusability and sterilization of various medical items, the cost/benefit/safety analysis of using plastics in numerous healthcare applications makes it tough to beat.

Last October, National Geographic magazine ran a story titled 'Can Medical Care Exist Without Plastic?', and noted that 'Single-use plastic can be an attractive option for hospitals – cheap, durable, and easily tossed out – and each new fresh plastic container or covering offers a newly sterile environment. That's why clinicians cover themselves and everything they use in plastic.'

Various types of plastics and elastomeric materials serve countless uses in the medical and healthcare arena – from basic items such as gloves, tubing, eyeglasses, blood bags and disposable syringes, to high-tech, bio-compatible applications such as heart valves, joint replacements and 3D-printed prosthetic limbs.

Ultra-high molecular weight polyethylene (UHMWPE), for example, is excellent for use in prosthetics, while polypropylene's high-heat properties make it ideal for applications where autoclave sterilization and radiation stabilization processes are required, according to global materials supplier Trinseo (formerly known as Styron).

Various forms of chemical-resistant plastics also play a key role in combatting so-called 'hospital-acquired infections,' or HAIs, which kill tens of thousands of patients every year. Lightweight, durable polymers are often the material of choice for the fast-growing application of 'wearable' devices used as fitness trackers and health monitors. Sterile plastic packaging, meanwhile, helps to keep vital medical components and devices safe and protected.

And none of these account for the overwhelming use of plastics in medical equipment, ranging from MRI scanners and dialysis machines to hospital beds and sophisticated test equipment.

Companies such as Jabil-owned Nipro Healthcare also delve deeply into the engineering aspects of medical devices. Nipro focuses heavily on mechatronics, a design process that involves integrating mechanical

and electrical hardware with software processes, thereby enabling device designers to deliver highly sophisticated mechatronic functionality.

'One of the major healthcare trends affecting mechatronics technology is miniaturization,' notes Nipro. 'Ever-smaller instruments, devices, and equipment are being developed to enable less-invasive surgical techniques that enable faster recovery.' The use of micro-actuators and micro-sensors is driving the development of tiny mechatronics designs for everything from scientific instruments for DNA sequencing to micro-pumps and auto-injectors for drug-delivery products.

Additive manufacturing also is playing an increasing role in healthcare delivery. Germany's Evonik Industries AG, for instance, recently invested in Meditool, a Chinese 3D printing start-up specialized in implants for neuro and spinal surgeries. Using 3D models generated by Meditool's own software, Evonik can print implants using its high-performance polyetheretherketone (PEEK) polymers.

Other materials suppliers are striving to make plastics more resistant to the harsh cleaning chemicals often encountered in hospitals and operating rooms. Minnesota-based compounder RTP Company has developed a proprietary alloy technology designed to maintain strength, functionality, and integrity, even with repeated exposure to hospital cleaners used to disinfect medical devices. The firm says these thermoplastic compounds, known as the RTP 2000 HC series, 'can help solve cracking issues in existing devices and open a new realm of possibilities for the design of hospital equipment and plastic housings that require frequent disinfection, such as mobile ultrasound and x-ray machines, enteral feeding devices, drug infusion pumps, blood filtration equipment, and more.'

RTP also supplied a glass fiber-reinforced PC/ABS alloy compound known as the RTP 2500 Series, to Novare Surgical Systems to use in its RealHand line of minimally invasive surgical instruments. Novare has integrated its RealHand HD technology into a series of endo-laparoscopic instruments such as graspers, dissectors, scissors, and needle drivers.

Kraiburg TPE, meanwhile, recently launched a new line of thermoplastic elastomers that not only hold certifications for healthcare applications in accordance with European Union and U.S. Food and Drug Administration standards but can also be combined directly with polyamides – including transparent PA12. The compounds are fully certified and suitable for a variety of attractive medical devices, including those used for in vitro diagnostics.



PolyOne Corp. also supplies a number of materials for use in healthcare applications, including for catheters and tubing, and various medical devices. Recently, though, it tackled a slightly different challenge – helping a nonprofit charity called Global Vision 2020 to create a simple, effective way to bring clear eyesight to people living in extreme poverty. The resulting diagnostic device, called USee™, allows minimally trained practitioners in the field to accurately test the eyesight of people in impoverished areas. PolyOne's IQ Design unit helped design the device and provided the medical-grade polycarbonate for the rectangular lenses used to help diagnose the patient's prescription vision needs.

Another materials firm, Germany's Covestro, worked closely with Ohio-based medical equipment maker Enable Injections to create a new, on-body drug-delivery system to help patients who need biologic drugs derived from organic sources to treat cancer, diabetes and other diseases.

Biologics need to be injected or infused. Typically, this has required inconvenient visits to specialty healthcare facilities or painful self-injections of high-viscosity medications. Now, patients can wear this Enable device and easily self-administer the doses they need, when they need them. The new system – made with Covestro's Makrolon® Rx1805 polycarbonate in

a purple tint, and its Bayblend® M850 XF PC/ABS blend – provides the necessary safety, durability and bio-compatibility while being aesthetically pleasing.

And nowhere is plastics more prevalent in healthcare than in packaging. Most drugs are dispensed in some sort of plastic bottle, container or foil-backed blister pack, and packagers increasingly are adding 'smart' technologies to such products to improve safety while also helping users to keep track of the medications they are taking.

Austrian packaging group Alpla, for example, recently introduced CRC justONE, a very light, childproof closure, manufactured in just a single injection molding process with straightforward assembly. Normally, there are three parts to a childproof closure with a tamper-evident band that can only be opened by simultaneously pushing and turning the closure. And these parts typically are produced in three separate production steps and assembled later. This new production process from AL-PLA Pharma, Alpla's newly consolidated healthcare brand, has now streamlined this into a sig-

nificantly more efficient workflow. National Geographic asked the right question recently. And, in short, the current answer is, 'No, safe, efficient medical care today cannot exist without plastic.'

Come to CHINAPLAS 2020 in Shanghai this April 21-24 to see first-hand some of the amazing technologies that are helping to enable modern medicine. For more information about CHINAPLAS 2020, please visit the official show website at www.ChinaplasOnline.com.

CHINAPLAS 2020 is organized by Adsale Exhibition Services Ltd., Beijing Yazhan Exhibition Services Ltd., and Adsale Exhibition Services (Shanghai) Ltd. and co-organized by China National Light Industry Council – China Plastics Processing Industry Association, China Plastics Machinery Industry Association, The Plastic Trade Association of Shanghai, Messe Düsseldorf China Ltd. The event is also supported by various plastics and rubber associations in China and abroad. First introduced in 1983, CHINAPLAS has been approved by UFI (The Global Association of the Exhibition Industry) since 2006. CHINAPLAS is exclusively sponsored by the Europe's Association for Plastics and Rubber Machinery Manufacturers (EUROMAP) in China for the 31st time. CHINAPLAS is currently Asia's leading plastics and rubber trade fair.

EcoVadis ESG-rating

Metalloinvest improves its indicators

Metalloinvest, a leading global iron ore and HBI producer and supplier, and one of the regional producers of high-quality steel, announces the positive dynamics in the sustainable development indicators, which have been reflected in the score of the independent international rating agency EcoVadis.

Based on the actualisation of the Corporate Social Responsibility (CSR) rating in 2019 Metalloinvest has been awarded a 'Silver' rating. Metalloinvest's rating improved by 3 points year-on-year to 60 points in 2019, while the average industry rating was 43 points.

Metalloinvest was ranked in the top 12% of companies rated by EcoVadis globally. At the same time, the Company featured in the top 8% of the 'Environment' category and in the top 4% in 'Labor and Human Rights' category among the producers in the manufacture of basic iron and steel industry.

Andrey Varichev, CEO of Management Company Metalloinvest, commented: 'We constantly improve our standards and practices in the field of employees' life and health protection, we take care of environment and well-being of local residents in the towns where the Company operates. Sustainable development has become a key pillar in our Company's strategy for long-term leadership and corporate culture. Our custom-

ers and investors enhance attention in ecological and social aspects of the business. An independent assessment of the company's progress in this sphere is important to them.'

Based on the results of its assessment, EcoVadis identified areas where Metalloinvest can improve CSR practices in order to achieve an even better rating in 2020.

The Company has improved its positions in the number of ratings in sustainable development for 2019. In the WWF's (World Wide Fund for Nature) rating Metalloinvest took 4th place compared to 6th in the previous year, showing the best result out of all companies in the ferrous metallurgy industry. Also, the Company received the highest rating in the 'Information Disclosure' category.

The Company took 45th place in Interfax-ERA's Fundamental Efficiency (environmental and energy) rating. The rating covers the largest top-150 companies in Russia and Kazakhstan. Moreover, Metalloinvest ranked second among the top-5

steel companies in terms of steel production.

Metalloinvest uses the best available technologies in production as well as directly reduced iron and steel casting in the electric furnace, enabling the Company to minimize its environmental footprint. Between 2007-2018 total dust emissions into the atmosphere from Company enterprises declined by 24%.

The Company increases the output of high-quality products (such as HBI and premium quality pellets), the use of which allows customers to reduce gas emissions during steel production.

The total expenses of Company in the field of environmental protection were 44 bn roubles in 2013-2018.

Metalloinvest has been supporting UN global initiatives, including pursuing 17 UN Sustainable Development Goals (UN SDGs). In 2019, Metalloinvest has joined the United Nations Global Compact (UNGC), an international initiative centered on corporate sustainability and social responsibility.

In 2019 Metalloinvest became the first private company in Russia to sign a loan agreement with ING Bank in the amount of up to USD 100 mn, the interest rate of which depends on the ESG rating.



Metalloinvest is a leading global iron ore and merchant HBI producer and supplier, and one of the regional producers of high-quality steel. The Company has the world's second-largest measured iron ore reserve base and is one of the lowest-cost iron ore producers. Metalloinvest is wholly owned by Holding Company USM LLC. Alisher Usmanov is the major beneficiary of Holding Company USM LLC (49%).

EcoVadis is an international rating platform that evaluates the management system for corporate and social responsibility of business. The EcoVadis methodology is based on international CSR standards including the Global reporting initiative, the UN Global compact and ISO 26000. EcoVadis evaluates companies in 4 groups: environment, labour & human rights, ethics and sustainable procurement. In 2018, Metalloinvest received the 'Silver' CSR rating from EcoVadis.

For the 'metroSNAP'

HARTING interface supplies Power, Data and Signals

Swiss automobile manufacturer Rinspeed is presenting its new 'metroSNAP' concept vehicle at the Consumer Electronics Show (CES) this January 7-10, 2020 in Las Vegas. Rinspeed AG is once again using innovative HARTING technology. This time, the technology group is providing a specially designed interface that supplies the vehicle with power, data and signals.

HARTING is taking the next step in the direction of the mobility concepts of tomorrow with the Rinspeed 'metroSNAP'. Whether passenger transport or freight logistics, the metroSNAP can be used in highly versatile manner. The HARTING module helps the driver use the vehicle for a wide range of tasks in a fast, flexible manner. Like its predecessors – the «SNAP» and «microSNAP» – the vehicle is

divided into two elements. On the one hand, there is the Skateboard that serves as an optimised electric vehicle, and on the other there is the 'Pod', which can be switched out in flexible manner to accommodate different tasks. Communication, signal transmission and the power supply must all work smoothly between these two elements. Connectivity between them is automatically established as soon as the Pod and the skate-

board are securely connected. With considerations to the special requirements for mechanical plugging, the power, signals and data begin to flow.

Rinspeed has relied on HARTING's reliable solutions in recent years. Both of the past two years have seen Rinspeed go with a Fast-Charging solution from subsidiary HARTING Automotive. HARTING Automotive has long been at home in the automotive supplier industry and recently saw a sharp increase in demand for e-mobility solutions. The company leverages its decades of experience in the field of connection and transmission technology to develop and produce charging equipment for electric and plug-in hybrid vehicles.

Rinspeed and HARTING have been working together successfully since 2016. The MICA, which garnered HARTING the prestigious HERMES AWARD at the HANNOVER MESSE in April 2016, was integrated into the «EtoS» vehicle for autonomous emission and condition monitoring. In 2017, HARTING used its miniMICA – another component from the evolutionary MICA ecosystem – to support Rinspeed's «Oasis» car. In 2018, HARTING provided the fast-charging technology for the «SNAP». Last year, the «microSNAP» was charged using the fast-charging push, with HARTING thereby living up to its ambition to be an innovative driver of technological development.



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Asia poised to prosper

CHINAPLAS 2020 focuses on tapping into potential in Asian markets



As the global economy faces mounting downward pressure and factors of uncertainties, the global plastics and rubber industries are at crossroads. The challenges are steering investments to become more conservative as companies adjust their strategies. However, growth outlook remains strong for Asian markets that are not new to economic ups and downs, especially the emerging economies in the region. CHINAPLAS 2020 takes a 'local + regional + global' approach and provides a platform of highly cost-effective and technologically advanced solutions that fit the needs of new markets for both upstream and downstream players.

Asia leads the world in economic vitality

Asia has become the largest cluster of emerging economies in the 21st century. This region boasts more than half of the world's population, expanding middle class, increasing consumption, and continuous industrial transformation. Asia's fast rise remains attractive despite economic slowdown. Asia currently represents more than a third of the global economy, and its self-reliance continues to strengthen — trade within Asia far exceeds the total of Asia's trade with other regions such as North America and Europe.

Attracted by the region's momentum, foreign investment continues to grow in Asia. According to the 'Progress of Asian Economic Integration Annual Report 2019' by the BoAo Forum for Asia, investments are retreating from developed economies, especially the capital market in the U.S., and instead going into emerging Asian markets. China's Ministry of Commerce announced in November 2019 that China is gaining more foreign investment, not less, despite the

sluggish global investment scene. During the first three quarters of 2019, China established more than 30,000 new foreign-invested enterprises and utilized 683.2 billion yuan of foreign investment — up 6.5% year over year.

Strong growth in emerging Asian markets

Emerging economies in Asia are continuously introducing new policies to help companies transform and to attract foreign capital. Combining that with their domestic market potential, the manufacturing sector is growing in leaps and bounds. Every year, about 60% of CHINAPLAS overseas visitors come from Asia. And the number of visitors from Southeast Asia has been growing in recent years.

Vietnam is becoming a rising star in the region. According to the nation's General Statistics Office, its GDP grew by 6.98% YOY in the first nine months of 2019, the highest rate in the past 9 years. Furthermore, the plastics industry there has averaged annual growth rate of 15-20% in the last decade.

Among Vietnam's advantages is its demographic dividend that features a large pool of low-cost labor, combined with competitive costs of land, energy, and taxes. In addition, its ports and stable currency have supported the growth of its export-oriented manufacturing sector. Many multinational conglomerates have established footprint in Vietnam, including Nike, Adidas, Olympus, Microsoft, Nokia, Canon, LG, Foxconn, Sony, Samsung and more. Chinese plastics machinery manufacturers, such as Haitian, BORCH, Yizumi and JWELL, have also set up production bases, warehouses, subsidiaries, and after-sales service offices there.

Just like Vietnam, other Asian countries such as Thailand, Malaysia, Indonesia and India are also delivering solid growth, each with strong focuses.

Dubbed as the Detroit of Asia, Thailand has become an automotive capital with 2019 production expected to reach 2.15 million vehicles. Thailand is also known as the World Kitchen, and its packaging industry is expected to grow at a CAGR of 4.2% between 2017 and 2020.

Malaysia is also benefiting from rapid growth of the packaging industry, with more than 1,500 plastics processors in the nation. Malaysia projects its food and beverage industry to reach \$268 million in revenue in 2019, sustaining an 18% compound annual growth rate; in the meanwhile, the pharmaceutical industry is also giving a boost to the packaging market.

In Indonesia, the food and beverage market grows 3.7% annually and supports the expansion of the plastics industry. Automotive investment has been active in Indonesia as well. Hyundai is investing in an electric car plant with annual production capacity of 250,000 vehicles. An investment consortium from South Korea, Japan and China is building a \$4 billion EV battery plant.

In addition, Thailand, Malaysia and Indonesia — the 'Big Three' — have released their respective roadmaps for electric vehicles.

India, home to a population of 1.3 billion, boasts demographic dividend, a massive and fast expanding domestic market, and rapidly growing construction, automotive and chemical industries.

China rises as a popular regional headquarter location

The global appeal of China's enormous market is self-evident. The nation continues to see advancement of urbanization, release of purchasing power of non-tier-1 cities, a thriving digital economy, leading 5G and blockchain technology, and connected mobility. The sheer size of its domestic market volume, booming exports, and strong investment are driving China's economy on a high-quality growth path.

In spite of the global economic slowdown, foreign-invested enterprises in China remain optimistic about the Chinese market and continue to invest at



these critical times. China is the world's largest producer and consumer of chemicals. There is no slowdown in the investment of foreign plastics machinery and materials suppliers, who are increasingly setting up regional headquarters, production bases, and/or R&D centers in China. German chemical giant BASF is investing a total of \$10 billion in an integrated production base in Guangdong. It is also building a brand new innovation park in Shanghai and a comprehensive surface treatment site in Zhejiang. ExxonMobil, Lanxess, Sol-

vay, Dow Chemical, Shell, Saudi, Saudi Aramco and many more well-known multinational companies are also expanding their investment in China with major petrochemical projects via joint venture or sole proprietorship.

Grounded in Asian markets

To seize the opportunity with rising Asian economies, the plastics and rubber industries must not miss the upcoming CHINAPLAS 2020. As the leading global trade show in the industry, CHINAPLAS was launched in 1983 and has witnessed the sectors' development along with China's economic transformation. CHINAPLAS will present 3,900+ exhibitors (more than 2,500 exhibitors from China), 11 country/region pavilions including Germany, Italy, U.S., and Japan, as well as 19 theme zones, centering around innovative solutions in plastics and rubber machinery, materials and processes.

Song Yew Eng from Malaysia's Chuan Weng Plastic SDN BHD said, 'In the past, we relied on labor supply from Indonesia and Vietnam to offset our shortage, but workers from Vietnam are on the decline. I found the right machinery at CHINAPLAS to make up for our labor shortage. There are lots of options for semi-automatic machines that meet production needs and are cost-effective at the same time. As of now, our production has not reached the stage of full automation, and high-end machinery does not suit our current particular needs.'

Due to the relatively weak industrial infrastructure in Vietnam, the plastics industry there faces shortages of raw materials and processing equipment — companies there are in dire need of advanced production equipment and materials. Tran Ngoc Linh, Director of Manutronics in Vietnam, stated during his last CHINAPLAS visit, 'I'm from Vietnam. I come to CHINAPLAS mainly to find new business and new partners. Since we are now focusing on one-stop solutions, we are looking for materials for electronic components. The show is massive. I've spent two days on the show floor, but still haven't been able to visit all of the suppliers that I'm interested in.'

CHINAPLAS has deep roots in China but has tasked itself with serving the Asian markets to the fullest. Regardless of their region and business scale, visitors will for sure gain a lot — find suitable products and solutions to tackle business growth challenges, reduce production costs, reach breakthroughs in new product development, and accomplish environmentally friendly and sustainable growth.

CHINAPLAS is scheduled to return to the National Exhibition and Convention Center, in Hongqiao, Shanghai, PR China on April 21-24, 2020. This iconic industry event is expected to present 340,000 square meters of exhibition space, bring together 3,900+ global exhibitors and 180,000+ visitors, to join hands to overcome the challenges, and together create a prosperous future.

High honour for Dietmar Harting

Dr.-Ing. e. h. Dietmar Harting has been honoured with the Karmarsch Medal of the Leibniz University Society Hanover e.V. for his outstanding commitment as a shaper and supporter of technology, science and industry. The speech of congratulations was given by former German President Christian Wulff.



Dietmar Harting, longstanding CEO and personally liable partner of the HARTING Technology Group, was actively engaged as president of national and international associations and bodies for norm setting, standardisation and innovation, thereby contributing significantly to the positive development of the German electronics and electrical engineering industry. Harting's commitment was emphasised at the official ceremony at Herrenhausen Castle (Hanover) by the Chairman of the Board of the University Society, Dr. med. Volker Müller, and by former German President Christian Wulff. From 2003 to 2009, Dietmar Harting headed the German Institute for Standardization e.V. (DIN), and from 2008 to 2009 he was at the helm of the European Committee for Electrotechnical Standardization (CENELEC). In addition, from 1998 to 2004 he led the Central Association of the Electrical Engineering and Electronics Industry (ZVEI). Many of the normative foundations that Industry 4.0 and industrial digitalization today are based on were created during this time. From 1995 to 1998, Harting was on the 'Council for

Research, Technology and Innovation' of German Chancellor Helmut Kohl, and between 2004 and 2008 he was a member of the 'Partners for Innovation' initiative of German Chancellors Schröder and Merkel. The medal was donated in 1925 by the Hannoversche Hochschulgemeinschaft (now known as the Leibniz University Society Hanover e.V.). The medal is in memory of Karl Karmarsch, the first director (1831-1875) of the Hanover University of Applied Sciences, later the Polytechnic School and Technical College, forerunner of today's Leibniz University. The medal, which bears a picture of Karmarsch (1803-1879) and a dedication on the reverse, is bestowed in odd-numbered years. The award is given to individuals who have made outstanding contributions to the promotion of technology and business. Previous winners have included e.g. former presidents of the Federation of German Industries (BDI), Hans-Olaf Henkel and Tyll Necker, CEOs Prof. Ferdinand Piech (VW), Jürgen Großmann (RWE), Bernhard Plettner (Siemens) and Wulf Bernotat (E.on), as well as Maria-Elisabeth Schaeffler, shareholder of the Schaeffler AG.

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The future of the oil & gas sector is now

Sulzer demonstrates efficiency and performance increasing technologies at ADIPEC 2019

Sulzer will be presenting key technology trends and innovations in the energy sector at Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC, November 11-14, 2019, Abu Dhabi National Exhibition Centre). As a one-stop-shop for advanced components, solutions and services for oil and gas separation processes, the company is leading the industry into the future.

ADIPEC is a forum where business leaders and policymakers can discuss the latest trends in the oil and gas sector as well as shape the future of this industry. Sulzer Chemtech, the leader in separation and mixing technology, will contribute to the discussion by presenting its innovations in the field. These include the company's comprehensive product, licensing and service offering for the upstream, midstream and downstream sectors.

Of particular interest to visitors will be Sulzer's increased capabilities in technology licensing and process equipment technology, following the acquisition of GTC Technology, global licensor of process technologies and mass transfer solutions for the oil and gas sector. In this way, customers will benefit from a more comprehensive full-service provider of mass transfer equipment, entire plants and associated services. Sulzer will also showcase its columns and vessels for effective separation in upstream operations. The range of high-performance and high-quality solu-

tions available are being adopted in an ever-growing number of oil and gas fields, both onshore and offshore. Recently, the company has won contracts for the supply of mass transfer equipment in Marjan and Berri Field Development projects in Saudi Arabia.

Two pieces of equipment under the spotlight at ADIPEC 2019 will be Compact Mass Transfer and Inline Separation Technology (cMIST™) systems for natural gas dehydration and electrostatic coalescer internals for vessels (VIEC™) to remove free and emulsified water in oil emulsions. Both solutions outperform conventional technologies, maximizing separation efficiency while substantially reducing equipment footprint.

Attendees interested in optimizing their mixing processes will be able to find out more about Sulzer's range of static mixers. These allow businesses to obtain highly homogeneous substances with extremely efficient, durable and reliable systems. Consequently, quality and consistency can be achieved with



minimal operational and maintenance costs.

Sulzer will also highlight the maintenance, repair and revamp capabilities of its Tower Field Services (TFS) group. This provides round-the-clock support for quick turnarounds and emergency shutdowns. Sulzer's automated weld overlay technology for example offers a durable and cost-effective method to restore the mechanical integrity of columns and vessels as well as improve their corrosion resistance.

Visitors who want to learn more about Sulzer's column internal offering for separation processes in oil and gas facilities will be able to experience this via a virtual reality (VR) app. This will

allow users to walk around full-scale trays and learn about their capabilities and applications.

Sulzer, headquartered in Winterthur, Switzerland, is a global industry leader in pumping solutions and services for rotating equipment, as well as separation, mixing and application technology. Sulzer Chemtech provides processing industries with mission critical technologies and equipment, whether they are in the oil & gas, chemical, pharmaceutical or food and beverage sectors.

Our capabilities extend from technology licensing through products to services, offering customers a one-stop concept for the design, manufacture, maintenance, repair and upgrade of process equipment.

The range covers individual components, such as column internals, complete units, skids and technologies for refineries, petrochemical and bio-polymer plants.

With over 180 production and service sites around the world, we deliver solutions that truly support our customers.

In 2018, we achieved sales of CHF 3.4 billion with around 15'500 employees. Our shares are traded on the SIX Swiss Exchange (SIX: SUN).



Приход ЕС200D

Volvo CE поставила в Россию первую партию новых экскаваторов

Гусеничный экскаватор Volvo EC200D производится на заводе компании в городе Чангвон в Южной Корее. Новая машина пришла на смену 18-тонной модели EC170D. За счет увеличенной эксплуатационной массы (19760-20310 кг) и большей устойчивости EC200D способен выполнять более сложные задачи по сравнению с предшественником. Универсальный экскаватор может использоваться в ходе строительных, дорожных и ландшафтных работ, в том числе при прокладке коммуникаций.

Новая модель оборудована надежным 4,7-литровым двигателем Volvo D5 мощностью 167 л.с. Он соответствует экологическому классу Tier 3, а также имеет высокий крутящий момент при низких оборотах, что гарантирует производительность и повышенную топливную экономичность экскаватора. Мотор вместе с оптимизированной гидравлической системой обеспечивают эффективную и плавную работу машины.

EC200D оснащен уникальной встроенной системой рабочих режимов Volvo. В зависимости от стоящих перед экскаватором задач, она позволяет выбрать наиболее подходящий режим работы: «холостый ход», «высокая точность», «универсальный», «высокая мощность» или «максимальная мощность». Благодаря этой системе, оптимальной скорости поворота надстройки, высоким значениям усилия на режущей



кромке ковша, а также коротким рабочим циклом EC200D работает с максимальной производительностью.

Просторная комфортабельная кабина экскаватора с круговым обзором, эргономично расположенными органами управления и регулируемым сиденьем оснащена множеством современных функций, предназначенных для повышения безопасности, комфорта и производительности труда оператора. Новый монитор I-ECU, на котором отображается вся необходимая информация для бесперебойной работы, обеспечивает удобство управления машиной.

Совокупная стоимость владения экскаватором EC200D ниже, чем у рыночных аналогов. Это достигается за счет прочной конструкции, увеличенных сервисных интервалов, качественных расходных материалов собственного производства Volvo и высокой остаточной стоимости машины при ее продаже на вторичном рынке.

«В общем объеме продаж Volvo CE за первое полугодие 2019-го доля импортированных среднетоннажных экскаваторов составила

29%. Мы ожидаем, что появление в России новой модели EC200D позволит компании удовлетворить возрастающие запросы клиентов и тем самым укрепить позиции Volvo Construction Equipment в сегменте 20-тонных экскаваторов и на рынке в целом», — рассказывает Михаил Авдеев, менеджер по поддержке продаж шарнирно-сочлененных самосвалов и экскаваторов Volvo Construction Equipment.

Группа компаний Volvo является одним из мировых лидеров по производству грузовых автомобилей, автобусов, строительной техники и силовых установок для морских судов и промышленного оборудования. Кроме того, группа компаний Volvo предоставляет готовые финансовые и сервисные решения. В группе компаний Volvo, штаб-квартира которой расположена в Гётеборге, работает около 95 000 штатных сотрудников. Ее производственные предприятия расположены в 18 странах мира, а продукция представлена более чем на 190 рынках. В 2017 году выручка группы компаний Volvo составила около 334,7 млрд шведских крон (34,1 млрд евро).



Digital Ecosystems at HANNOVER MESSE

The focal point of the show's industrial transformation on center stage of the exhibition

HANNOVER MESSE has a revamped layout, making it even quicker for visitors to zero in on the key industrial transformation technologies of greatest interest to them. The focal point of the show's industrial transformation message is the Digital Ecosystems showcase covering the full range of software for every link in the industrial value chain. The display is strategically located at the heart of the venue – in halls 14 through 17.

At HANNOVER MESSE 2020, processes and technologies that up until quite recently were regarded as separate and distinct will be showcased together in an integrated overview of process flows and solutions. 'In the current age of Industry 4.0, the focus is on flexible manufacturing, standalone yet integrated machines and systems, and autonomous exchanges of pro-

cess information,' said Hubertus von Monschau, Global Director Digital Ecosystems at Deutsche Messe. 'And the key to it all is the software that maps and manages these processes. At HANNOVER MESSE, all theme areas relevant to this will be clustered in the Digital Ecosystems display'.



cess information,' said Hubertus von Monschau, Global Director Digital Ecosystems at Deutsche Messe. 'And the key to it all is the software that maps and manages these processes. At HANNOVER MESSE, all theme areas relevant to this will be clustered in the Digital Ecosystems display'.

Among the exhibitors in this part of the show will be big-name regulars like Autodesk, Atos, Amazon Web Services, Cisco, Dassault, EPLAN, HUAWEI, Kaspersky, MPDV, Microsoft, PSI, SAP, Siemens PLM, Software AG and Telekom. There will also be a number of prominent newcomers such as Google, proAlpha, McAfee and Knapp. Their displays will span a range

of themes, including predictive maintenance, machine learning, MES (manufacturing execution systems), logistics (WMS and TMS), data analytics, CAD (computer-aided design), PLM (product lifecycle management), business platforms, ERP (enterprise resource planning) for real-time monitoring, virtual/augmented reality and industrial security.

The convergence of once separate areas of technology is also very clear from CAD, PLM and business platforms. Whereas only a few years ago CAD software was primarily about designing individual work-pieces and machine parts, there are now companies providing software platforms that model and manage entire value chains from design and parts procurement right through to final quality control. Dassault Systèmes is such a company. Its solutions enable collaboration across internal users and external suppliers and partners. 'We're not a CAD or PLM provider,' says Director Marketing EuroCentral Annegret Cox. 'We map entire product development processes. That includes generating initial product ideas, pre-production preparation and selling the completed product – all on the one software platform.'

ERP (enterprise resource planning) is another exciting focus of software convergence. At HANNOVER MESSE 2020, providers will present examples and use cases demonstrating how mechanical engineering and other firms can now leverage ERP tools in completely new ways. Predictive ERP, for example, is sparking more and more interest. It enables manufacturers to predict possible events and initiate the necessary measures and countermeasures. Integrated with the appropriate process models, predictive ERP

systems can facilitate better decision-making by running simulations of even the most complex scenarios.

Virtual and augmented reality are likewise being more commonly used in industrial applications. Take the design of powertrains, for example. It used to take engineers days to calculate all the parameters of a given design, but now, with the aid of algorithms, they can generate as many as 2,000 designs in the same timeframe. The designs can then be imported as 3D models into a VR lab, where everything, right down to the very last bolt and washer, can be disassembled, analyzed, adjusted and re-assembled.

Industrial Security is an extremely important and relevant section of the Digital Ecosystems showcase, particularly in today's interconnected industrial world, with Emotet and its ilk lurking in the digital undergrowth. Modern industry, where the digital integration of devices and production machinery has grown massively and will continue to do so, is exposed to a more or less constant risk of cyber-attack. No one is immune to these risks, as today's continual stream of reports of targeted attacks on businesses and government agencies shows. The upcoming HANNOVER MESSE will therefore present the best available solutions for organizations to safeguard themselves against cyber-attacks.



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For the Construction Industry

Digital Automation for the estimated \$10 Trillion Global Construction Industry

The Year in Infrastructure Conference, Digital Construction Works (DCW), a new digital automation, integration, and digital twinning services and fit-for-purpose solutions company formed by Bentley Systems and Topcon Positioning Group, will help revolutionize the construction industry by simplifying digital transformation. DCW solutions span every phase of the project – from planning to construction and operations through to asset management – creating a digital thread that connects technologies and workflows.

Contributing 13 percent of global GDP and an estimated \$12.9 trillion market by 2022, construction is the largest industry in the world and is positioned to benefit from significant value through productivity improvements. The World Economic Forum estimates within ten years, full-scale digitization could lead to savings between USD 700 billion to 1.2 trillion (13% to 21%) in design, engineering, and construction efforts. Construction organizations need capabilities to analyze historical data, forecast what might happen in the future to avoid operational issues before they occur, reduce waste and downtime, improve safety, and reduce risk and liability. Logistics and on-site materials can be managed using digital tools to reduce waste and optimize for just-in-time delivery, increasing productivity on the construction site.

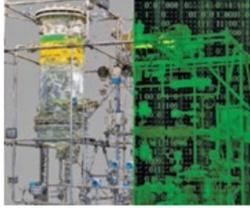


DCW end-to-end services automate and optimize construction operations through the digital transformation of the asset lowering full-lifecycle asset costs. Through digital twins, you can visualize the asset, check status, perform analysis, and generate insights to predict and

optimize asset performance. Fast and continuous site surveying using modern technology shortens the digital twinning cycles between the physical and digital twin, achieved in combination with automated analytics. This process is applicable for linear infrastructure, but also vertical construction or the extensive off-site modular construction.

‘We see the benefits of working with organizations such as DCW, whose position in the market as the only end-to-end construction solutions service provider brings us confidence in how our core business targets will be kept a priority throughout the entire project,’ said Harry Parnell, head of digital project delivery for Balfour Beatty. ‘Their ability to be agnostic to technology is also important. We know that a combination of technology and process improvement will provide us with the best digital solution and make sure that technology follows the operational process change efforts, but never leads it. The use of technology in silos throughout our organization will never bring real operational, or industry change, but the use of technology with digital twin workflows and key operations processes in a focused and strategic effort will enable Balfour Beatty to reduce the gap between the office and the site continually.’

‘Balfour Beatty’s vision of 25% less on-site work on projects by 2025 can only be achieved through the successful implementation of digital twin workflows and key operational processes and the use of technology. Implementing full digital construction



solutions into our business, such as those provided by DCW, will enable us to achieve our project outcomes and business goals, including ‘Zero Waste’ and ensure that Balfour Beatty projects can continually improve by learning from our successes’, said Harry Parnell, head of digital project delivery for Balfour Beatty.

Owners don’t need to do it on their own. DCW can do it for them. DCW will help them to automate and connect disparate tools, including fit-for-purpose software and cloud services from Bentley and Topcon or, if needed, by other third parties. DCW can provide next best practices and enable project teams to gain visibility and insights through data and analytics to improve construction planning, execution, reduce project costs, increase safety and reduce liability, and improve capital project delivery.

Through its Partnering and Community, DCW has a global network of service providers who engage in projects with our customers to deliver digital transformation outcomes. The network includes technology partners such as Bentley Systems and Topcon Positioning Group and other third-party technology providers. Educational resource providers, including schools, unions, and trades, will be partnered-with to help fill the construction skills gap.

The Labs at DCW drive increased transparency and efficiency in construction operations. The Labs

turn big ideas into solutions and serves as the construction industries R&D engine, where we prove repeatable workflows and technology integrations affecting interoperability, reporting, analytics, and digital twin delivery. DCW Labs use analytical solutions to extract meaning from enormous volumes of data to help organizations improve their data-driven decision making. Such solutions help support the integration of project data across disciplines and teams, at every step of the construction process, for better collaboration to identify conflicts and risks. It helps to transform the industry from its legacy document-centric paradigm to a complete digital space-time operating system. Project teams receive verification in near real-time for on-time, predictable, and on-budget project delivery.

Ted Lamboo, CEO of DCW, said: ‘The construction industry sees that digitizing their workflows will increase efficiency and avoid risk and overruns. Leveraging Digital Twins will accelerate this process, and DCW can support the marketplace to make this transition. Our broad spread of digital solutions and services will support our users in this process.’

‘We believe that open collaboration and a commitment to improving the industry are the primary requirements for step-function advancement in digital construction, said Jason Hallett, COO of DCW. No single tool company can, or should, own the entire construction process as that journey only leads to a lack of innovation. DCW is starting with the backing of two large product companies, and we will welcome technology partnerships and service providers that can contribute to delivering a complete portfolio of digital solutions that are capable of moving the industry toward a more efficient and automated future.’

DCW brings together both a combination of Bentley and Topcon

colleagues, including Domain Experts from the construction industry.

DCW is led by CEO, Ted Lamboo, who most recently served as a senior vice president of strategic partnerships and held previous positions including senior vice president of reality modeling and business development, senior vice president of international operations, president of Bentley Asia/Pacific, and vice president of sales for Bentley Europe, Middle East, and Africa. Before joining Bentley in 1994, Ted served for 12 years at Intergraph Europe.



Jason Hallett, formerly a vice president at Topcon responsible for global software business development and digital construction initiatives, serves as chief operations officer of DCW. Jason’s responsibilities span global operations, including the Labs (Digital Twin Lab and Solutions Integration Lab), project delivery, partnering, and third-party resource management. His career spans 31 years in the surveying and construction industries.

Tom Degenis, former chief executive for SYNCHRO, a 4D construction technology provider that Bentley Systems acquired in 2018, will serve as Principle Research Officer for the new company. With 40 years of experience in construction, both on the site and in the office, and construction consulting working for one of the big-4 professional services and accounting firms,

Degenis is committed to improving the construction industry through software platform development and systems implementation.

Susan Brandt serves as vice president of business development, where she has global responsibility for business strategy, growth, and user success within Digital Construction Works. Over a solid 30-year career, Susan has built a reputation as a trusted advisor to some of the largest and most respected owner-operators, engineers, and constructors in the world. She began her career in the OG&C industry as an early adopter of 2D and 3D CAD (BIM). Before joining Digital Construction Works, Susan served as Bentley’s vice president of global accounts, achieving consistent top growth results for the company. In her 23-year tenure at Bentley, she has held several leadership roles in sales, product management, and business development and was a key contributor in scaling ProjectWise, one of Bentley’s flagship products, from a first-mover advantage in 1998 to a sustainable #1 market share in top ENR firms. No matter the position, Susan has and will remain the voice of the user, always taking an ‘outside-in’ approach partnering with users on their outcomes. We are delighted that Susan will be on the Senior Leadership Team, as the voice and advocate for our users during this time of required change in the industry.

Beth Emmert serves as senior director of marketing joining the DCW leadership team most recently from Bentley Systems, where she held positions including that of strategic partnerships marketing director and head of Americas marketing. Beth is an industry award-winning marketing professional whose marketing career spans over 30 years, having started in marketing and communications for a global environmental engineering, design, construction, and consulting firm. Beth’s background also includes

15 years in biotech and healthcare software technology and services. She’s held positions including product management, product marketing, communications, and global marketing responsibility for publicly traded and private start-ups. Her experience also includes M&A’s and corporate restructuring.

DCW operates independently with a board of directors comprising members from both organizations. Bentley and Topcon will continue to co-develop AEC products for use across many industries. DCW serves as the Strategic Partner for both Topcon and Bentley for servicing the digital transformation in the construction industry.



Founded in 2019, Digital Construction Works (DCW) provides digital automation, integration, and ‘twinning’ services, around fit-for-purpose software and cloud services from Topcon Positioning Group, Bentley Systems, and other software vendors, to realize the breakthrough potential of construction for industrializing construction. DCW is transforming the construction industry from its legacy document-centric paradigm and simplifying and enabling digital automated workflows and processes, technology integration, and digital twinning services for infrastructure. DCW is a Bentley Systems and Topcon Positioning Group joint venture.

Helicopters descending on Dubai

The Helicopter Company, Bell and More to be at Dubai Airshow

The Dubai Airshow, the largest aerospace event in the Middle East, will bring together key players from all aspects of the aerospace industry, including the world’s leading helicopter companies. When the show opens on 17 November 2019, trade attendees can expect to see offerings from this year’s platinum event sponsor, the Helicopter Company, alongside Bell, Sikorsky (a Lockheed Martin Company), Leonardo, the Russian Helicopter Company and many others.

Launched earlier this year backed by Saudi Arabia’s state-run Public Investment Fund (PIF), the Helicopter Company is the Kingdom’s first commercial helicopter operator and is aligned with the Saudi Vision 2030 to provide the best support services to the transportation industry in general, and the aviation industry in particular.

The Helicopter Company plans to use the Dubai Airshow as a platform to develop relationships with contacts in the industry, connect with other players in the local and global aviation and aerospace industry and to introduce its latest Rotorcrafts for VIP transportation within the Kingdom.

‘The Middle East’s aerospace industry is a growing market that offers a lot of opportunities,’ says Yahya AlGhorabi, CEO of The Helicopter Company. ‘The big-

gest challenges would be to keep up with the accelerating growth in this industry. Fortunately, this makes room for a multitude of investment opportunities and partnerships for local and foreign partners. The Dubai Airshow is a perfect opportunity for talks about such partnerships.’

In the Middle East region, Bell focuses on Law Enforcement with the Bell 429, Bell 412EPs and military trainer opportunities for the Bell 505 and Bell 407, plus the light attack helicopter segment with the Bell 407. On the other side of the spectrum, the Bell 525 super-medium helicopter is disrupting the market with its new technologies, redefining luxury vertical lift, is a 16 to 19 seat helicopter coming to market. The first commercial helicopter with fly-by-wire controls, Bell describes it as ‘probably the most



advanced commercial helicopter that has ever been developed for oil and gas and search and rescue’.

‘The Dubai Airshow is the opportunity to meet with our regional customers in one place, to continue the engagements we have year round with our operators,’ says Patrick Moulay, Senior Vice President, Bell Commercial Business – International. He continues, ‘It is also a great platform for us to provide updates on our activities, our local success and what you can expect from Bell in the Middle East.’

‘The Dubai Airshow has always been the platform for the entire aerospace industry,’ says Michele van Akelien, Managing Director of show organisers Tarsus F&E LLC Middle East. ‘The helicopter sector is an important part of that, and we are thrilled to have the Helicopter Company on board as platinum sponsor for the Dubai Airshow 2019.’

The static display area at the Dubai Airshow will include up to 165 aircraft including an AW139 from the Helicopter Company, an Mi-2MSB-1 from Motor

Sich and a CH-47F Chinook Helicopter from Boeing, in addition to other helicopter models.

Tarsus F&E LLC Middle East is one of the most influential names in the aerospace industry’s events sector, and which launched the very first Dubai Airshow in 1989, in conjunction with Dubai Civil Aviation Authority, Dubai Airports and the UAE Armed Forces.

Covering all aerospace-related events in the Tarsus portfolio, Tarsus F&E LLC Middle East has a long-standing relationship with the global aerospace industry, an in-depth knowledge of the market and a hard-earned reputation for delivering event excellence. Tarsus F&E LLC Middle East maintains offices in Dubai and London.

Dubai Airshow is firmly established as a key event on the international aerospace calendar. The next edition takes place at its purpose built location – DWC, Dubai Airshow Site, 17-21 November 2019. The Dubai Airshow is the foremost platform to promote any trends to discuss issues that will help develop the Middle East aviation industry.

International success

Wibu-Systems wins the GLOBAL Foreign Trade Award 2019

The prestigious GLOBAL Foreign Trade Award 2019 has gone to Wibu-Systems alongside the other winners Blanco Group and Wickert Maschinenbau. Every two years, the TechnologyRegion Karlsruhe and the foreign trade committee of the Karlsruhe Chamber of Commerce picks internationally successful companies from the region for the GLOBAL award. This year’s award, presented at a gala event on 16 October, draws attention to particularly effective international business models, with the award jury considering such factors as the candidates’ roots in the Karlsruhe region, structures, innovation and performance track record, intercultural affinity, and ability to adapt to the markets in other countries.



subsidiaries in the United States, China, and Japan and sales offices in Europe. Direct exports account for approx. 55% of Wibu-Systems’ sales, although this share rises to almost 80% when sales through distributors and subsidiaries and the similarly strong exports of German clients are included.

Wibu-Systems’ CEO and founder Oliver Winzenried was proud to receive the award: ‘Accepting the GLOBAL 2019 on behalf of Wibu-Systems is a personal honor for me. Free trade benefits us all: It creates better and cheaper products, more choice, more jobs, more security, and greater peace through co-operation. We care about open international standards, as do our clients who integrate our solutions in the products they sell around the world. The sheer diversity of challenges and talents we encounter worldwide makes us more competitive, and diversifying our markets makes us less exposed to the vagaries of single markets.’



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Global Launch

Zemana's Groundbreaking Real-Time Deepfake Detection SDK

Zemana launches its newest product, Deepfake Detection SDK. This Software Development Kit supports real-time detection of deepfake videos, fake audio, and fake visual content, and can be easily integrated into a wide range of platforms.

Cybersecurity faces an emerging threat known as 'deepfakes', the most powerful cyber-weapon in history. Deepfakes are AI-generated synthetic media, typically forged video footage. This kind of 'fakery' was once limited to the film industry and intelligence agencies. Now AI advances have democratized it. Ordinary users can download deepfake software and create convincing videos smearing politicians, celebrities and company executives. The cyber security industry has only a short time to get ahead before the collapse of public trust in any media. There is a clear need to focus on creating solid detection algorithms.

After months of intensive research, Zemana has designed Deepfake Detection SDK. This enables developers to add a multi-layered detection engine to a range of platforms. This will enable governments, social media sites, instant messaging apps, and news and media organizations to detect AI-made forgery in digital content before they cause harm to society.

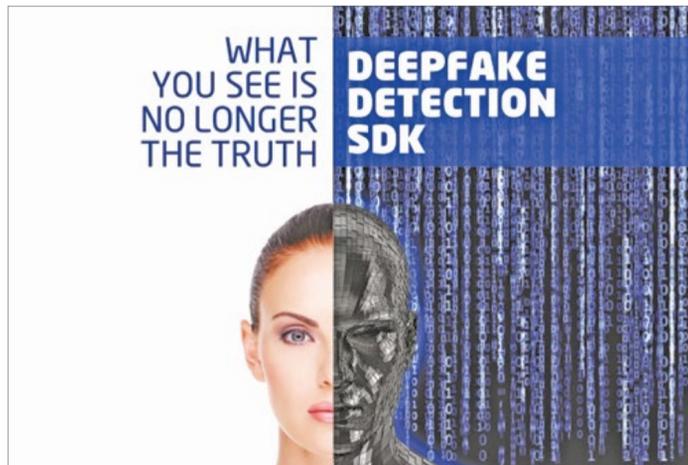
Samir Mujovic, Zemana Vice President of Business Development, said: 'Deepfakes are going to be the first serious punch from artificial intelligence to humanity. We are very pleased to be unveil-

ing our new product at GITEX, based on our proven expertise in technology and security software systems.'

Zemana was established in 2007 to provide the world with innovative cyber-security solutions. It's our job to deal with complex malicious software and other cyber threats by producing simple solutions. We want our users to focus on

doing what they do best with-out having to worry about cyber threats. We continually monitor for threats, enabling us to roll out defenses before threats can cause damage.

We believe the growing cyber-security challenge comes from sophisticated AI-generated threats. Consequently, we have upgraded to AI-based technologies to fight and stop these threats.



Breakthrough via Innovation

CHINAPLAS 2020 empowers plastics & rubber industries to transform with new opportunities

Economic and political uncertainty remains a top challenge for today's global manufacturing industry. A host of factors including trade friction, economic slowdown, and weakening demand from China are dampening manufacturing growth and leaving some sectors in a decline. In the meantime, China is pushing to transform its manufacturing industry to focus on higher quality and domestic market while encouraging foreign investment. During this economic downturn, leading companies are ready to pave the road for transition and transformation in order to convert challenges to opportunities. As a key industry indicator, the global leading tradeshow CHINAPLAS 2020 will zero in on market trends and buyer needs, provide a high-tech, high-quality and high-value platform of technology innovations, and help companies uncover new opportunities and grow in an ever-changing economic environment.

Foster growth in a decline

The global auto industry is cooling down, as 2018 broke a 7-consecutive-year expansion. Global auto sales shrank to 95.6 million vehicles in 2018 caused by declines in Europe and China in the second half of the year. As the 28-year-long streak of brisk growth in the Chinese auto market came to an end in 2018, industry players are facing unprecedented pressure.

With the market slowdown, auto companies are determined to seek changes and transform. On the front of environmental

priority. China's Ministry of Industry and Information Technology issued its first 5G commercial licenses on June 6, 2019, drawing great attention. As the core infrastructure for the deployment of big data, AI, virtual reality and other technologies, the scale-up of 5G will form a powerful driving force. Due to its exceptionally high speed, large capacity and minimal delay, 5G demands higher quality materials from the base station end to the application end. In addition to 5G, development trends such as the Internet of Things, autopilot vehicles, telemedicine, smart facto-

ed solid plastic waste. To address these issues, plastics manufacturers need to continue to promote reuse and recycling, plan out full product lifecycle to include recycling in advance, and provide environmentally friendly and recyclable innovative solutions such as biodegradable plastics.

The emergence of unilateralism, trade protectionism, and anti-globalization trends and the escalation of related actions have also adversely impacted the global economy and the plastics and rubber industries. The key to transformation lies in innovation. Companies can benefit from leveraging technological innovation, enhancing independent innovative capability, increasing product value and market competitiveness, adjusting strategy and deployment, and actively exploring domestic market and emerging markets, thereby strengthening their risk resistance capacity.

Join hands in the new journey

The grim economic environment is forcing companies to accelerate their transformation. CHINAPLAS 2020 will continue to

followed the pulse of China's economic development, witnessed the growth of the plastics and rubber industries, experienced the 1998 Asian financial crisis and the 2008 global financial tsunami, and continuously produce success stories. As always, we quickly adapt to the changes in internal and external environment; adapt to the trends of technological revolution, industrial transformation, consumption upgrading, etc.; strengthen the long-term collaboration with global plastics and rubber manufacturers, downstream users and industry associations; turn first-hand intelligence into latest market demand; and cooperate with upstream and downstream companies to make progress together.

2018 marked the first CHINAPLAS exhibition in Hongqiao, Shanghai, and the show was a great success. CHINAPLAS is scheduled to return to the National Exhibition and Convention Center, in Hongqiao, Shanghai, PR China on April 21-24, 2020. This iconic industry event is expected to present 340,000 square meters of exhibition space, bring together 3,900+ global exhibitors and 180,000+ visitors, to join hands to overcome the challenges, and together create a prosperous future.

See you in Düsseldorf!

The CHINAPLAS team will be present at the K 2019 fair in Düsseldorf from October 16-23 to promote CHINAPLAS 2020's new highlights and mingle with buyers and industry experts. The organizer has prepared fabulous gifts and free registration passes for visitors who pass by its booth (EN1-02) at the show. The team invites you to stop by to say hello, network with them and share your visiting experiences. See you soon in Düsseldorf!

CHINAPLAS 2020 is organized by Adsale Exhibition Services Ltd., Beijing Yazhan Exhibition Services Ltd., and Adsale Exhibition Services (Shanghai) Ltd. and co-organized by China National Light Industry Council - China Plastics Processing Industry Association, China Plastics Machinery Industry Association, Messe Düsseldorf China Ltd., the Plastic Trade Association of Shanghai. The event is also supported by various plastics and rubber associations in China and abroad.

First introduced in 1983, CHINAPLAS has been approved by UFI (The Global Association of the Exhibition Industry) since 2006. CHINAPLAS is exclusively sponsored by the Europe's Association for Plastics and Rubber Machinery Manufacturers (EUROMAP) in China for the 31st time. CHINAPLAS is currently Asia's leading plastics and rubber trade fair.



protection and sustainable development, new energy vehicles and auto lightweighting demonstrate strong potential. Driven by intelligent driving and Internet of Things, the auto industry is undergoing unprecedented changes. Manufacturers have an urgent demand for new materials, new equipment, advanced processing technologies, automation, and AI. Cost reduction and efficiency improvement are the go-to strategies for both OEMs and suppliers. Aside from the commonly seen structural optimization, process and production efficiency improvement through technological innovation can provide viable solutions as well.

Nations around the world are accelerating their informatization as a strategic development

ry, and smart city will also trigger disruptive changes and create infinite space for innovative materials and processes.

Under the pressure of environmental protection, how to properly dispose of and reuse plastics has been a question in the spotlight. Multiple cities in China are implementing waste sorting. The European Union, Sweden, Canada, Peru, and other countries and regions have proposed plans to ban single-use plastic products. China escalated its waste ban to prohibit the import of all industrial waste plastics at the end of 2018, following the ban of imported consumer waste plastics at the end of 2017. India, Thailand, Malaysia, and other countries are also following the suit to ban import-

stress on technological innovation, with the focuses on 'smart manufacturing, innovative materials, green & circular economy', tackle the pain points of the industries, help increase their competitiveness, and seek breakthroughs in the difficult situation.

Ada Leung, General Manager of Adsale Exhibition Services Ltd., the show organizer of CHINAPLAS, remarks, 'The current market environment is full of challenges, but it is also a great time for strong companies to rise against the trend. CHINAPLAS 2020 continues to show strong booth bookings as seen in previous years, indicating the confidence of plastics and rubber suppliers in creating endless innovation and achieving success in the future. In the past 30 years,



16th October, Bogota

WHAT TO EXPECT FROM EXPODEFENSA 2019?

International tri-service security and defense exhibition, Expodefensa 2019, will present technologies and solutions adapted to the needs of Latin American and the Caribbean region. It will take place in less than two months, from 2 to 4 December in Bogota (Colombia).

Since its inception, Expodefensa is positioning itself as the leading Security and Defense event for Latin America and the Caribbean. Supported by the Ministry of Defense of Colombia, Expodefensa is organized by the Ministry of Defense, [Codaltec](#), [Corferias](#) and [COGES International](#).



In 2019, international exhibitors and subcontractors from all over the world will present the widest range of proven high-tech products and cost-effective solutions adapted to the regional requirements. They will exhibit alongside the Colombian armed forces and military industry, which are currently undergoing significant development.

In 2019, Spain is the country guest of honor. Among already registered Spanish companies are Navantia, SAES, JOMIPSA...

In addition to manufacturers, service companies, laboratories and research institutes, international organizations and public institutions will participate in the event.

Among the exhibited equipment and systems, Expodefensa presents **UAVs, bulletproof clothing, optronic, communication and cyber solutions, equipment and systems for naval, police and emergency sectors, logistics and maintenance** and many others.

Expodefensa 2019 welcomes official delegations, Security and Defense forces, manufacturers and trade visitors looking for business opportunities from Latin America and the Caribbean. **Over 12,000 professional visitors and more than 70 Official Delegations** are expected.

Expodefensa offers a **3-day workshops programme** covering diverse and complementary security and defense topics.

The trade fair is a **great opportunity to develop network and business**, to communicate with direct and potential clients, to reinforce international corporate identity and increase visibility on dynamic Colombian and Latin American market.

Expodefensa is **the unmissable meeting for all the Security and Defense players with interest in Latin American and the Caribbean market** who wish to discover, to understand, to meet and to discuss on this ever-evolving sector.

The 2019's edition will be held from **2 to 4 December** and already seems to be very promising.

Press Service EXPODEFENSA

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The Mbombe 4x4

Protected Armoured Vehicles from Paramount Group



Paramount Group, the global technology and aerospace business, has announced that the Mbombe 4x4, the newest addition to its advanced Armoured Personnel Carrier (APC) family of vehicles, has received final certification for the independently verified blast tests which exceeded the criteria for NATO STANAG 4569 – one of the highest levels of protection that can be achieved by an armoured vehicle in its class.

This announcement follows the exceptional performance of the Mbombe 4x4, which features unique flat-floor mine protection technologies pioneered by Paramount Group, during a series of explosives tests designed and executed by Landward Sciences, a programme of the Council for Scientific and Industrial Research (CSIR), South Africa's leading and independent scientific research body.

The blast tests are performed in accordance with the highest international specifications, namely, STANAG 4569, a NATO standardisation agreement that institutes benchmarks for occupant protections in vehicles such as the Mbombe 4x4, in this case including three 10 kg TNT explosions under the wheels and the hull, and one 50kg side blast test, carried out at a 5 meter distance to imitate an Improvised Explosive Device (IED).

The Mbombe 4 was designed and developed specifically for local manufacturing in customer countries, in response to the increasing requirement from Governments for the development of their own defence industrial capabilities.

The vehicle has successfully completed a series of summer trials with several armed forces around the world. Featuring next-generation design, advanced technologies and highest

levels of protection, the result of decades of real-world battlefield and asymmetrical warfare experience, the Mbombe 4x4 is ready to serve customers.

Though the Mbombe 4 is equipped for full mission capability and maximum versatility, it



has a singular mission – soldier survivability. Protecting the lives of combat personnel is our utmost priority; our commitment to this cause is reflected throughout our entire portfolio. In doing so, we today serve proudly as world leaders in the research, development and manufacturing of protection technologies.

As part of the blast testing programme, the integrity of the Mbombe 4 was subjected to both intense experimentations and

post-test evaluations that took several months to complete, with final inspections of the Mbombe 4 yielding outstanding results. Each of these tests is intended to validate explosives resistance and occupant protection capacities for logistics and light-armoured vehicles by pushing unmodified units to their functional limits, using expertly controlled trials and post-test evaluations.

Key features of Mbombe 4 also include a unique, rear-door ramp design, which has been proven in combat on 6x6 and 8x8 IFVs. The ease of ac-

cess provided by the rear-door ensures the rapid deployment of the crew while the vehicle is static or on the move.

The Mbombe 4 performs with a burst speed of 140km/hr, an 800km operating range and an independent suspension system designed to optimally meet the increasing demand for outstanding protection yet adaptability in conventional and asymmetrical warfare alike. The mine resistant carrier is functionally ver-

satile over challenging terrains and fully operational across a myriad of contemporary and diverse counter-terrorism, border patrol, counter-insurgency, internal security and peacekeeping missions.

Both the launch of Paramount Group's Mbombe 4 and its first customer, the United Arab Emirates were announced at the 2019 International Defence Exhibition and Conference (IDEX) in Abu Dhabi.

Paramount Group is the African-based global technology and aerospace business. It is a leader in defence and security innovation and is a trusted partner to sovereign governments across the globe. Paramount specialises in the creation of portable manufacturing facilities through technology and skills transfer, resulting in new local capabilities and sustainable jobs, proven to not only benefit local defence industrial capabilities but economic diversification and growth.

Paramount Group has been responsible for the development and production of a broad range of highly advanced armoured and

mine protected vehicles that are in operation around the world. The family of APC and combat vehicles which has been developed from clean-sheet design is at the vanguard of armoured vehicle technologies. These vehicles have been designed and developed to meet the increasing demand for multi-role, high mobility, and mine hardened platforms, providing a solution to the ever-changing demands of the global battlefield.

EMO Hannover 2019

Global machine tool community paving the way for Industry 4.0

70 companies from ten countries have connected 110 machines and 28 value-added services at EMO Hannover 2019 via the umati standard interface. 'umati is opening up a new chapter in production,' says Dr. Heinz-Jürgen Prokop, Chairman of the VDW (Verein Deutscher Werkzeugmaschinenhersteller – German Machine Tool Builders' Association), at the umati press conference on 16 September 2019 in Hannover. 'The interface enables machine tool manufacturers to fulfill another Industry 4.0 promise: the simple, fast and secure exchange of data,' continues Prokop. Creating a connection and providing a uniform language for machines, systems and software are essential prerequisites for reaping the benefits of digitalisation in production. The fact that individual companies no longer have to concern themselves with the correct functioning of the network interconnection represents a tremendous step forward.

International acceptance

umati has also already made a strong impression internationally. Three international consortia from major machine tool manufacturing countries have joined the interface: ProdNet from Switzerland, Edgecross from Japan and NCLink from China. In addition, the machine tool associations from China, the United Kingdom, Italy, the Netherlands, Austria, Switzerland, Spain and Taiwan as well as the European machine tool association Cecimo are supporting the project.

'Choosing the OPC UA standard as a basis for the development of the interface supports international dissemination. It ensures that umati can be used free of charge worldwide,' explains Prokop. 90 companies are contributing to the standardization work in the Joint Working Group together with the OPC Foundation. The release of Version 1.0 of the Companion Specification, the next milestone, is planned for the middle of next year.

Effectiveness of umati

The showcase at EMO Hannover 2019 demonstrates that the interface is already up and running. Each machine has an OPC UA server which sends the data to a data hub which has been set up especially for the trade fair. There, the software value-added services can access the data via OPC UA clients and show what added value can be generated from the resulting data. How the data is coming together can be experienced via a live dashboard at the umati central information booth (E24) in Hall 9.

Whether or not umati is successful will ultimately depend on how customers rate the added value of the interface. For their part, manufacturers must provide this added value in a dependable manner. 'For this we need reliable partners who can provide the necessary components such as control architecture and software components. We will achieve this through close cooperation with the control manufacturers and, in future, no doubt also with extensive parts of the supply chain,' says VDW Chairman Prokop.

But until then, the umati working group still has much to do. Version 1.0 will be the starting signal for launching actual products. 'In the future, the umati brand should represent a promise: anyone who buys a umati machine and has umati interface software should be able to get the data flowing with no difficulty,' says Prokop.

In order to achieve similarly extensive distribution to that of the USB connector in the consumer goods sector, the VDW is working – in addition to the Companion Specifications – on establishing a binding specification for the configuration of communication parameters, defining minimum requirements for implementation, and developing standardised test procedures to assess performance. Further aims include extending the brand's global reach, defining binding conditions for its use and setting up a viable organisational structure. 'Version 2.0 is already on the horizon because there are many aspects which have not yet been tackled, such as production order management on the ma-



chines, or tool management,' concludes the VDW Chairman.

Background umati

umati – universal machine tool interface is an industry initiative of the VDW. It was set up in 2017 by the companies Chiron, DMG Mori, Emag, Grob, Heller, Liebherr-Verzahn-technik, Trumpf and United Grinding. Its goal is to achieve an open standard for data exchange based on the global interoperability standard OPC UA. It also defines all necessary framework conditions to ensure seamless and secure integration of customers' machines and software. The ultimate goal of the umati brand is to provide international visibility and support its partners' marketing and quality assurance efforts. The standardisation activities of the Joint Work-

ing Group set up with the OPC Foundation are now followed by almost 100 companies all over the world.

The German machine tool industry ranks among the five largest specialist groupings in the mechanical engineering sector. It provides production technology for metalworking applications in all branches of industry, and makes a crucial contribution towards innovation and enhanced productivity in the industrial sector as a whole. Due to its absolutely key role for industrial production, its development is an important indicator for the economic dynamism of the industrial sector as such. In 2018, with around 73,500 employees (annual average in 2018, companies with more than 50 employees), the sector produced machines and services worth 17.1 billion euros.

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New types of lubricant

VDW searching for ways to protect plastics in machines

Since the EU Reach chemicals regulation (EC 1907/2006) came into force, a whole series of environmentally harmful biocides has disappeared from cooling lubricants. This is good news, but it is now gradually becoming apparent that, while containing fewer biocides, the new emulsions are seemingly less compatible with hard plastics and elastomers. Seals and other components made of these materials are less resistant to the new coolants than to previous formulations. 'Our companies are reporting increasing problems here. And so we have launched various initiatives,' reports Torsten Bell, a member of the Technology and Research Department at VDW (Verband Deutscher Werkzeugmaschinenfabriken e. V. – German Machine Tool Builders' Association).



Buckling seals

Since the Reach Regulation came into force, biocides which had commonly been used in the past have now disappeared from the market. 'Only a dozen or so are now allowed,' says Bell. 'The industry is therefore looking for alternative ways to keep the microorganisms in check, especially in aqueous lubricants. Emulsions with alkaline pH values are frequently used, for example. However, this can have an effect on the polymer materials commonly used in machine tools.'

According to Bell, seals and O-rings, hoses, wipers, toothed or other drive belts and even polycarbonate protective screens (such as those used in cutting machines) are particularly affected.

Buckling is often observed, for example, in linear seals on roller blinds and other kinematic coverings. The seals in glass scales, which are used to measure the travel distances, can also fail. As a result, the scales become dirty and can no longer measure accurately. Another problem, according to Bell, is improper handling of the cooling lubricant. 'If, for example, a machine which is being used with an emulsion heats up during operation, some of the water will then evaporate. This and other ingredients in the emulsion must be regularly readjusted. In one case we heard of, this was presumably

not being done and the proportion of oil in the lubricant became more concentrated – rising from seven to 20 per cent. There were significant adhesions and deposits in the machine and the seals and toothed belts failed after very short periods of time.'

Threat of long downtimes

Considerable damage can result. After all, it is not always a single seal which needs to be replaced: multiple seals and other machine components such as cables may also be affected. The machine itself, in the worst case, the entire production can be brought to a standstill until they have all been replaced. In addition, there is a risk of defective seals damaging other machine parts, such as the machine spindle.

The failures can usually be prevented by switching to other materials: to FKM instead of NBR, for example. 'With standard components such as O-rings, good results can also be achieved by using alternative materials,' says Bell. However, the mechanical and other technical properties also need to meet the requirements. Furthermore, FKM, for example, is much more expensive than polyurethane (PU) which is otherwise commonly used. This is why some components made of certain materials are not even sold on the mass market.



A standard for cooling lubricant compatibility

But how can plastic resistance to cooling lubricants be ensured? 'Many lubricant suppliers are not prepared to guarantee the universal stability of their coolants. Using different materials in the machines for each individual project is, however, too costly for machine tool manufacturers. Guidelines would therefore be helpful. Cooling lubricant manufacturers, for example, could authorise the use of their media with certain plastics. 'It would be even better if manufacturers of components such as seals were to authorise their products for use with cooling lubricants in general or for certain CL classes,' suggests Bell.

For this reason, the VDW supports the use of immersion tests for certain coolant classes initiated by the Verband der Schmierstoffindustrie (VSI – German Lubricant Industry Association). The VSI has defined a series of sample coolants which can be used for testing the CL stability of plastics. These can be obtained from the VSI members. 'These sample coolant lubricants will serve as the basis of an eventual standard, which is now to be tackled as the next step,' explains Bell. Machine tool manufacturers as well as component and coolant manufacturers would then have a set of regulations at their disposal that confirms the stability of plastics in use with the more environmentally friendly lubricants.

Focus on elastomers and hard plastics

However, this is only one of three steps being taken by the VDW. With regard to elastomers, more is needed than purely static exposure in the form of immersion tests. The Deutsche Wissenschaftliche Gesellschaft für Erdöl, Erdgas und Kohle e. V. (DGMK – German Society for Petroleum and Coal Science and Technology) and VDW-Forschungsinstitut e. V.

have initiated a research project that is being carried out by the Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University and the Institute of Machine Components (IMA) of the University of Stuttgart. The project is being supervised by VDW's Working Group 5 'Machine Tool Design'. The aims are to obtain a better understanding of the interactions between the elastomers used in machine tools and cooling lubricants, and to develop a rapid test for the elastomer compatibility of coolants. The researchers have selected three exemplary elastomer components for this purpose: radial shaft seals, O-rings and coolant hoses.

Finally, a project financed from VDW funds has been running for a year at the Institute for Machine Tools and Factory Operation (IWF) at TU Berlin. The focus of this project is on the stability of polycarbonate guards in contact with the new lubricants. Tests are currently underway to determine the extent to which polycarbonate panels can withstand contact with coolant lubricants. Of practical interest here are flat viewing panels, but also cold or hot-formed curved panels. 'Due to their curvature, these cannot be protected from CL contact by a safety glass panel in the working area,' explains Bell. 'Protection is therefore more complex, for example in the form of a durable coating. The trials determine the retention capacity of artificially aged polycarbonate in impact tests, for example.' The VDW expects the results of these trials to be available by 2021.

The German machine tool industry ranks among the five largest specialist groupings in the mechanical engineering sector. It provides production technology for metalworking applications in all branches of industry, and makes a crucial contribution towards innovation and enhanced productivity in the industrial sector as a whole. Due to its absolute key role for industrial production, its development is an important indicator for the economic dynamism of the industrial sector as such. In 2018, with around 73,500 employees (annual average in 2018, companies with more than 50 employees), the sector produced machines and services worth 17.1 billion euros.

Acquisition of commsoft oases

Valsoft enters the aviation vertical



Valsoft Corporation Inc. ('Valsoft'), a Montreal-based company specializing in the acquisition and development of vertical market software businesses, is pleased to announce the acquisition of Communications Software (Airline Systems) Limited (Commsoft OASES), a leader in the aviation engineering and maintenance software market, based in Tiptree, UK.

Founded as a software house in 1971, Communications Software (Airline Systems) Limited won its first airline contract in 1975 with industry innovator Laker Airways in the UK, leading to the launch of the predecessor to OASES (Open Aviation Strategic Engineering System) the following year. Since its first association with the airline industry over 40 years ago, Commsoft has been continually developing its MRO IT system, now called OASES – a process that has been shaped in large part by feedback from its clients.

Gary Pollak, James Stock, David Pusey and Nick Godwin are extremely proud of the company they, along with their employees, have built and are optimistic about the company's future. 'In Valsoft, we have found a cultural fit and an entrepreneurial team that we confidently believe will be able to help Commsoft continue to grow and

evolve. We are confident our customers are in good hands, benefiting from a team of dedicated, passionate aviation professionals, and the backing of a larger software organization', said Gary Pollak.

The directors will remain involved to ensure a smooth transition, while Nick Godwin, will continue to lead the company as Managing Director. The company will continue to develop and support OASES, as well as all other products and services, providing a robust software solution to customers.

'This acquisition is a milestone in Valsoft's growth. We are entering a new and exciting vertical, with a business that has a long history of providing high-quality mission-critical solutions. We plan to invest tens of millions in the aviation software space through additional acquisitions and the development of complementary technologies. As such,

this will further build on Commsoft's reputation of customer success. We welcome the Commsoft team, clients and partners to our family and look forward to years of prosperous growth', said Stephane Manos, Head of M&A and Co-Founder of Valsoft. 'We will do our utmost to ensure that the directors' legacy thrives and that customers continue to benefit from world class products and support'.

Communications Software's OASES (Open Aviation Strategic Engineering System) is amongst the most successful aviation engineering and maintenance systems in the world. With over 130 aviation customers supported in over 55 countries and 6 continents, including national carriers, 3rd party maintainers, regional carriers, leasing companies, cargo specialists, charter operators and specialist rotatable stockists, based in the USA, Europe, The Middle East, Asia, Africa and Australasia, we have a very broad experience of all areas of aviation maintenance support.

Valsoft Corporation acquires and develops vertical market software companies, enabling each business to deliver the best mission-

critical solutions for customers in their respective industry or niche. A key tenet of Valsoft's philosophy is to invest in well-established businesses and foster an entrepreneurial environment that molds a company into a leader in its respective industry. On average, companies acquired by Valsoft have experienced growth north of 25% in the 18 months post-acquisition, all the while benefitting from a steady improvement of customer satisfaction (as measured by the Net Promoter Score). Unlike Private Equity and VC firms, Valsoft does not have a pre-defined investment horizon and looks to buy, hold and create value through long-term partnerships with existing management.

Valsoft Corporation was represented internally by David Felcissimo, General Counsel & Aude Florin, Legal Counsel, and by Russell Shear and Christophe Robert of Edwin Coe LLP. HSKS Greenhalgh acted as the exclusive corporate finance advisor to the selling shareholders of Commsoft OASES on this transaction. The selling shareholders of Commsoft OASES were represented by Martyn Brierly and William Bowler of Flint Bishop LLP.

DIMDEX 2020

High demand for exhibition space

Set to be bigger and more diverse than ever before, the seventh edition of the Doha International Maritime Defence Exhibition & Conference (DIMDEX 2020) will take place from 16 to 18 March 2020. With less than one year to go until key decision makers from the maritime defence and security industry meet in Qatar once again, DIMDEX organisers say that demand for exhibition space is high and have already received requests for bookings for the upcoming edition.



Held under the patronage of His Highness the Emir of the State of Qatar, Sheikh Tamim bin Hamad Al-Thani, and proudly hosted and organised by Qatar Armed Forces, DIMDEX has grown each year since its launch in 2008 and is now internationally recognised as a platform for businesses from the global defence industry to showcase their latest technologies to government entities and industry peers to form new partnerships.

Focused on 'Connecting the World's Maritime Defence and Security Community', DIMDEX 2020 will bring together the latest innovations and solutions under one roof. Participants will have access to an established delegation management system that offers a business matching service between the official VIP delegations and DIMDEX exhibitors. Thought leaders from around the globe will be sharing their expertise at the Middle East Naval Commanders Conference (MENC) and several international navies will display their warships at Hamad Port.

Strongly supported by His Excellency, Deputy Prime Minister

and Minister of State for Defence Affairs, Dr Khalid bin Mohamed Al-Attiyah, and the attendance of other Qatari military officials and government representatives, DIMDEX 2020 will continue to offer unprecedented opportunities to its participants. DIMDEX has a proven track record of delivering commercial opportunities for members of the maritime defence and security community. In 2018, it attracted 13,000 visitors from 69 countries and witnessed the signing of more than 35 agreements, partnerships, and memorandums of understanding.

With less than one year to go until DIMDEX 2020, a new report by the Stockholm International Peace Research Institute (SIPRI) shows that Qatar is ranked one of the top importers of major arms in the region. In addition, global defence spending – which reached a record of USD 1.78 trillion in 2018 – is expected to grow by 2% per year from 2019 to 2023 according to Jane's Defence Budget.

In this context, DIMDEX 2020 is expected to attract record numbers of exhibitors than in previous years. Organisers say that a diverse range of prime suppliers and manufacturers are requesting to book space, among

which are new exhibitors in growing areas of the defence industry like cybersecurity and artificial intelligence, adding to the range of products and technologies that will be showcased.

Staff Brigadier (Sea) Abdulbaqi S. Al-Ansari, Chairman of DIMDEX, said: 'The seventh edition of DIMDEX is set to be one of the most exciting to date and we are seeing high levels of interest from a wider range of industry players. It will provide an opportunity for key decision makers to learn about the latest industry trends and technologies, as nations continue to invest in their militaries to maintain stability and security. At DIMDEX 2020, I expect to see many new developments in the cybersecurity field, which is an emerging technology in the defence industry and an essential part of the defence ecosystem.'

'Growing each year since its inception, DIMDEX has become a firm fixture in the maritime defence and security industry calendar and I look forward to welcoming delegates to Doha next year. Besides meeting with previous edition's exhibitors, I hope to see many new participants from a larger number of countries as DIMDEX

widens its offering and expands into new areas.'

DIMDEX 2020 will serve as a platform for businesses to network with high-level defence industry stakeholders not only from Qatar but across the globe. Qatar's increase in military spending to record levels is likely to act as a draw for deal-makers looking for new opportunities in the region.

Staff Brigadier (Sea) Abdulbaqi S. Al-Ansari concluded: 'I very much look forward to this landmark event, which promises to deliver an outstanding experience for all.'

The Doha International Maritime Defence Exhibition and Conference (DIMDEX) will be held from 16 to 18 March 2020, under the patronage of HH Sheikh Tamim Bin Hamad Al Thani, Emir of the State of Qatar, and proudly hosted and organised by Qatar Armed Forces.

Now in its seventh edition, DIMDEX will 'Connect the World's Maritime Defence and Security Community' by providing limitless opportunities for exhibitors and visitors.

In addition to the main exhibition that will showcase the latest products and technologies, DIMDEX hosts the Middle East Naval Commanders Conference (MENC), a highlight of each edition that attracts thought leaders from around the world to discuss the latest geopolitical trends related to maritime defence and security. It will also feature the popular visiting warship display at the state-of-the-art, Hamad Port, and the participation of key decision makers represented by VIP delegations.

DIMDEX 2020 will follow a series of successful editions, after it became one of the must-attend events on the international calendar of defence and security industry.

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- ▶ The 1st China Civil Aviation Technology Equipment and Service Expo

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Rostec presented at EEF

Russian helicopters Mi-171A2 and Ka-226T for India



As part of its joint exposition with the Buryat Republic, Russian Helicopters Holding Company (part of Rostec State Corporation) presented its latest civilian helicopter Mi-171A2 and Ka-226T light-weight multi-purpose helicopter, which are planned to be supplied to India, at the Eastern Economic Forum in Vladivostok.

Earlier, Russian Helicopters and Global Vectra company (India) had signed a contract for the delivery of a Mi-171A2 helicopter, including an option for one more rotorcraft. The helicopter manufactured under this contract and already painted in the livery of the Indian customer will be presented at the Eastern Economic Forum. Its delivery to India is scheduled for late 2019 – early 2020.

The Ka-226T helicopter presented at the Forum is a demonstration of the prospects of Russian-Indian industrial cooperation – in accordance with the 2015 intergovernmental agreement, India will be supplied 200 such helicopters, of which 140 will be assembled locally.

At the Eastern Economic Forum, we show our Indian colleagues Ka-226T and Mi-171A2

multi-purpose helicopters designed for them. It is worth noting that our partners are well aware of all the advantages of the products of Russian Helicopters Holding Company. In India, Soviet and Russian-made helicopters make up more than 30% of the total fleet of civilian and military rotorcraft registered in the country. Our current projects create a good basis for further development of our cooperation,' said Viktor Kladov, Rostec Director for International Cooperation and Regional Policy.

The EEF also examined the Ka-226T parts and units, which are subject to localized manufacturing in India as part of this project. Last February, Russian Helicopters Holding Company signed agreements on a number of presented units with leading Indian aircraft manufacturers who desired to participate in the project to localize the Ka-226T helicopter production.

The contract for Mi-171A2 supply to India is a clear demonstration of the fact that our latest civilian rotorcraft is in demand abroad, it is waited for and counted on. The helicopters showcased at the Forum is ready for delivery: we will be able to transfer it to the customer as soon as the certificate for Mi-171A2 is validated in India', noted Andrey Boginsky, Director General of Russian Helicopters Holding Company. 'We also demonstrate the progress of the Russian-Indian Ka-226T project: the Ulan-Ude Aviation Plant has already mastered the manufacture of certain parts and components of the helicopter and is preparing to start its serial production. We are also gradually developing our cooperation with Indian manufacturers in terms of localization, our dialogue with some of them will be continued as part of the Forum. At the Forum, we present the Ka-226T with folding blades: this model is suitable for operation in marine conditions and for installation on board ships. This option is a good basis for more orders for this rotorcraft.'

Among other products presented at the Forum by the Holding Company is Ka-62 medium transport and passenger helicopter manufactured by Progress AAC named after Nikolai Saizykin. The model is showcased in the Primorsky Krai (Territory) Pavilion as part of 'Streets of the Far East' exhibition. On the verge of the Forum, the Ka-62 prototype took part in the flight program of the MAKS-2019 International Aviation and Space Salon in Zhukovskiy.

The Mi-171A2 helicopter is the latest representative of the Mi-8/17 helicopter family. It encapsulates the best features of world famous Mi-8 type rotorcraft. The helicopter is equipped with KBO-17 integrated onboard digital flight and navigation system ('the glass cockpit'), which makes it possible to operate the machine without an engineer on board, thereby reducing its crew to two people. The new engines and supporting system improved the helicopter's flight performance, including its cruising and maximum speed. Depending on the operator needs, Mi-171A2 helicopter can perform search and rescue missions, medical and cargo operations, fight fires or carry passengers day and night, at temperatures from -50°C to +50°C.

Ka-226T is a twin-engine light class helicopter, designed in coaxial configuration. A unique feature of Ka-226 helicopter is its modular design; it can be assembled with standardized easily removable modules of various configurations carrying special equipment.

The Fifth Eastern Economic Forum was from September 4 to 6, 2019. During the previous Forum edition, 220 agreements, contracts, memoranda and protocols were signed for the total amount exceeding RUB 3 trillion. The Forum was attended by 6002 delegates and 1357 media representatives from 60 countries.

JSC 'Russian Helicopters', a part of Rostec State Corporation, is a leading player in the global helicopter industry, the sole Russian designer and manufacturer of helicopters. The Holding Company was established in 2007 and is headquartered in Moscow. We operate five helicopter assembly plants, two design bureaus, component production and maintenance enterprises, aircraft repair plants and one helicopter service company providing after-sales support in Russia and abroad. The customers of the Holding Company are the Ministry of Defense, the Ministry of Home Affairs, EMERCOM of Russia, and other state customers, Gazpromavia, UTAir Aviation company, large Russian and foreign companies.

Export of the Best

From July 31st to August 2nd, a large meeting which was attended by more than 150 participants was held in Rostec with representatives of the State Corporation in foreign countries. Heads of Rostec and a number of holdings, industrial directors, heads of departments of the central office spoke at the meeting. Work with representatives was carried out in the divisions of the Corporation and Rosoboronexport for the purposes of analysis of the 2018 results and setting objectives for the near future. More on the results of the year of the export, plans and capabilities of Rostec in the world – in our material.

Export Beats Records

2018, Rosoboronexport delivered products overseas for a record amount of 13.7 billion dollars, the largest for its entire period of existence. A solid portfolio of foreign orders for the Russian military equipment reached the figure of 55 billion dollars. We managed to achieve these indicators in the conditions of an utmost difficult foreign policy situation, the most powerful sanction pressure on the Russian defense industry complex, on the State Corporation and its organizations, as well as unfair competition. The final figures for the supply of Russian military products and an impressive portfolio of orders demonstrate that the efforts of competitors did not lead to significant results. Work of local level representatives of Rostec was of great importance in achieving record results.

'Last year's record results are not the reason to rest on our laurels. There are quite enough problems in the sphere of Russian military-technical cooperation. Firstly, it is settlements with partners. The sanctions caused damage in this regard, although this issue can be resolved, including by converting contracts into national currencies. Secondly, the difficult geopolitical situation does not allow us to count on a sharp increase in military-technical cooperation in the near future', noted on the current situation Sergey Chemezov, General Director of Rostec.

Today, Rostec representatives around the world are doing a great job of finding new markets, but this is a long and laborious process. A possible solution here could be to increase the share of exports of civilian products and technologies from Rostec.

Transition to Civilian Tracks

The State Corporation's development strategy until year 2025 sets ambitious goals of increasing the share of civilian products in total revenue up to 50 per-

cent. This indicator amounted to slightly more than 30 percent according to the results of 2018. Significant increase of the civilian products production which are in demand both in the Russian and foreign markets is to be made in the next five years. Rostec representative offices in foreign countries have an important informational and analytical role in solving this problem.

Their task is to provide the Corporation and its organizations with the required information, data on potential partners and recommendations for entering new markets. It is due to the close and productive cooperation

with Rostec representative offices that Corporation organizations will be able to form an effective sales system and competently build service processes for their civilian products. Extensive experience in cooperation with foreign structures through the MTC will help Rostec representatives organize the promotion of Russian civilian products.

Peaceful Products for the Whole World

If Russian weapons are traditionally in high demand all over the world, then in the 'civilian' sphere we have to work more actively. Rostec is a unique conglomerate of defense industry enterprises with great opportunities for diversification of production. The corporation can offer the world community a wide range of civilian products.

For example, the Russian Helicopters holding company introduces new models of civilian he-

licopters for various purposes on the market. The multi-purpose Ansat and Mi-171A2 vehicles made a demonstration tour in countries of the Southeast Asia in 2018, which resulted in the signing of a number of contracts.

The civilian sector of the domestic helicopter industry is actively developing, and the excellent reputation of our military vehicles helps to promote the civilian ones abroad. A lot of work is being done on after-sales service and repair of helicopter equipment on the spot. Such a corresponding center was opened in Peru last year, it is planned to open centers in other countries. The organization of a support system for the entire life cycle of Rostec products abroad is one of

the promising areas of the Corporation's development. The Shvabe holding company offers comprehensive lighting projects Svetly Gorod (Bright city) for the cities, which have been successfully implemented for several years in the regions of Russia. In addition, Shvabe and other Rostec enterprises in cooperation carry out the construction and equipping of medical centers, including the production of modern neonatal equipment. Today, Schwabe medical equipment is supplied to 95 countries.

Another example of the civilian products that can adequately represent the State Corporation in the world are telecommunication equipment and robotics of the Roselectronika holding. The most striking civil project of the holding, implemented in 2018, was the construction of information and telecommunication infrastructure for the Football World Cup. The solutions of Roselectronics ensured the unprecedented quality of television broadcasts and uninterrupted communication for viewers from 220 countries.

KAMAZ heavy load trucks and specialized machinery are also actively exported. The auto giant shipped just over 4 thousand cars and assembly sets of parts in 2018 only. KAMAZ was recognized as the Best Russian Exporter 14 times. PJSC AvtoVAZ does not fall behind KAMAZ and: the export of a passenger car manufacturer in 2018 increased by 57 percent compared to the previous year and amounted to about 38 thousand cars. Lada branded cars are sold in 34 countries.

The Rostec strategy is determined up to the year 2025 and involves solving the problem of the State Corporation reaching the level of global players. The development is focused on the production of smart civilian products and their promotion in fast-growing world markets, as traditional markets have already reached maturity. And here the role of Rostec representatives in foreign countries is significant. Using their knowledge, experience and connections, they promote new Russian products for the market, find out the needs of local businesses and government agencies, formulate product requirements and, importantly, service. The development of the export capabilities of the Corporation is mostly in their hands.



High-end Concurrent Events



Shanghai World of Packaging (swop) 2019 will be held at the Shanghai New International Exhibition Centre (SNIEC). As a professional B2B platform for the entire value chain of packaging, the exhibits at swop 2019 include processing and packaging solutions for food, beverages, confectionery, bakery, pharmaceuticals, cosmetics, non-food consumer – as well as industrial goods and include technology and materials. The total exhibit space will reach 60,000 m², with more than 700 exhibitors participating at swop 2019 attracting more than 30,000 professional buyers from China and overseas.

Concurrent Event – SAVE FOOD China Forum. Food is a precious resource and due to the increase of people's living standards and consumption levels, the demand for fresh and high quality food is rising. At the same time, a significant amount of food is either lost or wasted – often caused by the lack of appropriate processing and packaging technology for the production of packaged food with an extended shelf life. With the theme of 'Linking the World, Serving China, Building an Economical, Environmental, Green and Healthy Living', the conference will focus on and discuss how to reduce waste in the fields of production, storage, transportation,

processing, consumption, and traceability of fresh food. It will explore the use of advanced processing and packaging technology, innovative packaging materials and processing methods throughout the entire industry chain to tackle food losses and waste 'Generation Z, Zoom the Future of Packaging' – Design & High-end Packaging Design Forum swop 2019 teams up with Shanghai Institute of Visual Arts (SIVA) in order to create a new concept for 'Generation Z', the generation born between 1995 and 2000. They will increasingly influence the purchasing habits in the near future. The conference is a unique opportunity to listen to their voices and figure

out how product packaging influences purchasing preferences and consumer behaviors of Generation Z.

The concurrent events are organized in partnership with the Shanghai Beverage Association, PKG family and Pack Zone. Furthermore, interpack 2020 and drupa 2020 presentations will be held during swop 2019, promoting the world's leading shows respectively.

Messe Dusseldorf (Shanghai) Co., Ltd. (MDS) established in 2009, is a subsidiary of Messe Dusseldorf GmbH, one of the world's top 5 exhibition organizers. MDS is committed to introducing world's No. 1 trade fairs to China and to providing Chinese and international customers with superior exhibition services. MDS is successfully holding more than 20 leading trade fairs and conferences in China, covering the industries of printing, packaging, wire and tube, plastics, renewable energy, medical devices, retail, safety and health, wine & spirits and caravanning. MDS runs branch offices in Shanghai

and Beijing with a workforce of some 70 full time employees. The worldwide outbound exhibition business (trade shows in Dusseldorf, Germany and other leading Messe Dusseldorf Global Shows) is organized by Messe Dusseldorf China Ltd. (MDC), serving Chinese exhibitors and visitors with superior customer service from its Hong Kong branch office.

Adsale Exhibition Services Ltd has been established in Hong Kong since 1978. It is the organizer of Chinaplas, the Asia's no. 1 exhibition in the plastics and rubber industries. Adsale is also the organizer of Sino-Pack, PACK-INNO, Sino-Label and Printing South China, etc. Backed up with enormous resources in Asia and with well-versed trade promotion strategies for the Chinese market, Adsale is endeavoring to provide cost-effective and integrated marketing solutions across various industries, to satisfy international suppliers' needs of tapping into the Chinese and Asian markets. The Group has offices in Beijing, Shanghai, Shenzhen and Singapore.

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DSE Vietnam 2019

Approved and endorsed by the Ministry of Defense and the Ministry of Public Security, the Department of Equipment and Logistics of the Ministry of Public Security, General Corporation of Economic and Technical Industry of the Ministry of National Defense, EIFEC Co. Ltd and EXPO SERVICES Pte Ltd will hold the International Exhibition and Conference on Defense and Security Expo Vietnam 2019 (DSE Vietnam 2019) from 2-4 October 2019 at Hanoi International Exhibition Center, 91 Tran Hung Dao, Hanoi City.

For the Ministry of National Defense, DSE Vietnam exhibits and seminars are said to be an activity in line with its policy of gradually modernizing the armed forces and strengthening their defense potential to maintain a military strength at a level necessary to ensure the defense and combat readiness of the defense forces. It includes a policy of expanding foreign relations and defense cooperation with other countries and participating more actively in defense cooperation activities at the regional and international levels. At the same time, the Event will also be a good opportunity for cadres and soldiers of the People's Army to directly learn and update themselves on the most advanced equipment and technologies available at the Exhibition as part of their continuing education and professional training to improve their combat readiness. In addition, it is also an opportunity for the Ministry's defense manufac-

turing enterprises to work and receive the transfer of repair and replacement technology and new production of defense components and products from leading defense manufacturers and experts at the Exhibition. With the co-organization of the Department of Equipment and Logistics of the Ministry of Public Security and its partners, the program will contribute in promoting Vietnam's defense and security image and status in the international community.

The Ministry of Public Security anticipates the world will continue to have profound changes in the coming years, with many unpredictable factors impacting on the security and development of nations, including Vietnam. Economic globalization creates opportunities but also generates many potential factors and challenges, requiring Vietnam to pay more attention to security and territorial sovereignty issues. In addition, the de-

velopment of technology to narrow the geographical gap through cyberspace also causes forces to cope with the challenge of non-traditional security threats such as trade, synthetic drugs, human trafficking, environmental security, terrorism risks and insecurity in network information. In this regard, the demand for equipping and upgrading modern and specialized civil security systems in Vietnam is increasing. Increased demand is accompanied by advances in science, technology, equipment, weapons and tools to support continuous improvement and development. The creation of events like DSE Vietnam will be the foundation for Security and Police units to update on the development trends and catch up with the most advanced technologies from countries around the world. The event also offers international security suppliers and manufacturers the opportunity to showcase their outstanding technologies, equipment, combat vehicles and their optimal solutions for security and territorial protection in the Vietnam market.

As a co-organizer of DSE Vietnam, the Defense Industry & General Economic Technical Corporation (GAET) of the Ministry of National Defense operating in the main areas of

import and export of industrial explosives, military trade, receiving technology transfer and foreign defense, aims to strengthen cooperative relationships with long-term partners, expand markets and seek new partners in the field of security and defense in the world, and perform the task of developing military trade and defense foreign affairs. The Corporation expects DSE Vietnam to be a regular activity that contributes to promoting Vietnam's manufactured industrial products to foreign partners, thus seeking export opportunities, enhancing the prestige of military enterprises and at the same time create opportunities for managing agencies, military enterprises, research units to learn and grasp advanced technologies in the international defense industry. The world has since expanded international cooperation in defense.

On the scale of 5,000sqm, the exhibition is expected to attract about 200 brands, seven national pavilions namely: Russian Federation, Ukraine, United States, France, Singapore, India and Israel along with two Zone booths from Ministry of National Defense and Ministry of Public Security. It is expected to attract a number of specialized visitors estimated at 5,000 people. Up to now, the Organization Board has received confirmed requests from many big corporations in the world such as Rosoboronexport, Techmash, NIIPH, UVZ, Ukspelexport, Lockheed Martin, Airbus, MBDA, Brahmos, IAI, AutoGyro, Starks Motors, Kamaz, Uaz, Arsenal, WB Electronics, TRD, Raytheon, Qiop-tiq, SCS Technologies, Precision Technologies and many more.

Alongside the exhibition, there will be networking activities where suppliers in attendance can meet up with the VIPs from supporting agencies, managers, military, police enterprises and research units at their stands. In addition, we have developed a comprehensive Symposium that takes place on 3 & 4 October with a series of topics on capacity build up and combat readiness for the security and defense forces.

Ansats Aurus by Rostec and NAMI



Russian Helicopters Holding Company (part of Rostec State Corporation) presented the Ansats helicopter with a highly comfortable cabin in Aurus brand style for the first time at the MAKS 2019 International aviation and space salon. The cabin has been designed by specialists of Russian Helicopters and NAMI (Central Scientific Research Automobile and Automotive Engines Institute).

Apart from computer modeling, to create optimum ergonomic design, the design of the cabin was produced using tests in which people with various anthropometric measurements took part. The Ansats helicopter has the largest cabin in its class. Combined with the design, this provides more space for passengers.

'Aurus is a premium brand which is becoming Russia's signature. Now it includes both cars and aircraft of the same style that is as comfortable as cars. It is no wonder that Ansats has been chosen as a base: this is a state-of-the-art helicopter whose advantages have already been appreci-

ated both in Russia and abroad. The new version of Ansats confirms that this is a multi-purpose helicopter and that there is great potential for its transformation to meet the requirements of various customers,' said Aviation Cluster Industrial Director of the Rostec State Corporation Anatoliy Serdyukov.

The helicopter has a light protection system with touch control. This technology has been used for the first time for a helicopter's VIP cabin. Individual lights and gaspers ensure additional comfort for each passenger. Besides, there are jacks for charging devices.

'We have managed to implement this project in the shortest possible time in close cooperation with our colleagues from NAMI. We began to develop the interior in April 2019 immediately after the design was approved. I would like to note that this is not just a new cabin, but a completely new approach to corporate transportation services: ten changes to the helicopter's design were made to make it more ergonomic. I am convinced that Ansats will complement the Aurus range perfectly, and soon, after we finish tests, we will be ready to receive orders for the new machine,' said Director General of Russian Helicopters holding company Andrey Boginsky.

Chief Executive Officer of NAMI Sergey Gaysin said: 'At the suggestion of Russian Helicopters, NAMI specialists eagerly began to work on the luxury version of the Ansats helicopter.

The expertise of Russian specialists in engineering, design and marketing gained when Aurus car was created allowed us to make a product meeting the highest international standards within a short time frame. Collaboration with Russian Helicopters holding company is the first step to so expand the Aurus brand that it makes not only cars.'

The light multi-purpose Ansats helicopter was designed by Kazan Helicopters design office. The machine is equipped with two engines and can be used for normal passenger and VIP transport, cargo delivery, environmental monitoring and as an air medical helicopter. High-altitude tests of Ansats have been successfully completed, which confirmed the possibility of its use in mountainous terrain at altitudes up to 3,500 meters. The helicopter can be operated in a temperature range between -45° and +50°.





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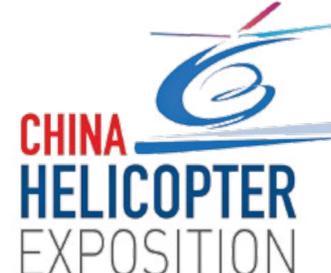
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DSE Vietnam 2019



The highly successful DSE Vietnam 2019 Press Conference was held on 8 August 2019 at the Ministry of National Defence's Guest House with the presence of official representatives from the Ministry of National Defence's Economic Department, the Defence Economic Technical Industry Corporation (GAET) of the Ministry of National Defence, the Department of Equipment Supplies & Warehousing under the Ministry of Public Security, EIFEC Co. Ltd and Expo Services Pte Ltd.

DSE Vietnam is the 1st tri-service Defence and Security event in Vietnam that is officially endorsed and supported by the Ministry of National Defence and the Ministry of Public Security.

well with the country's policy of modernizing its armed forces and enhancing the capability of the national defence apparatus in order to maintain military power and boost co-operation with other countries in this field.

"This event is expected to create an effective connection that helps exhibitors discuss technology challenges in the region and helps Vietnamese defence units and businesses access advanced devices and solutions in the region and the world," Colonel Thắng said. He added that the event would provide opportunities for local businesses to learn from the world's leading defence manufacturers and experts, as well as transfer products and technologies, and also help Vietnam prepare to host the 14th ASEAN Defence Ministers' Meeting (ADMM) next year.

Colonel Lê Văn Phái, Deputy General Director of the Department of Equipment Supplies and Warehousing under the Ministry of Public Security, said DSE Vietnam 2019 is expected to include advanced security technologies and solu-

tions, especially in the prevention of drug crimes, human trafficking, and terrorism.

On the scale of 5,000 sqm, the exhibition is expected to attract some 200 brands, seven national pavilions namely: Russian Federation, Ukraine, the United States, France, India, Israel, and Singapore along with 2 booths from the Ministry of National Defence and the Ministry of Public Security. It is also expected to attract 5,000 professional and trade visitors including top Vietnamese Government officials, senior officers and decision-makers from the Ministry of National Defence and the Ministry of Public Security agencies and industry participants.

Companies that are exhibiting in DSE Vietnam are Rosoboronexport, Rostec, Techmash, NIIPH, UVZ, Ukspelexport, Lockheed Martin, Airbus, Bell Helicopter, MBDA, Brahmos, IAI, AutoGyro, Stark Motors, Kamaz, Uaz, Arsenal, WB Electronics, TRD, Raytheon Anschutz, Qioptiq, SCS Technologies, Precision Technologies and many more.

Russia will be the star of Eurasia Airshow 2020



Eurasia Airshow 2020 will be held at Antalya International Airport on 22-26 April 2020. The aim of the event is to develop an extremely substantial business volume in commercial and military aviation industries. Furthermore, it is the only aerospace trade show to include flight demonstrations in Turkey.

"We had an very successful edition fo Eurasia Airshow in 2018. Also Russian companies got really good deals. Especially for this year Russia will be the star of the Eurasia Airshow 2020. Depends on the S-400 air defence systems deal and the upcoming fighter deal there will be very efficient deals on the ground."

Hakan Kurt, Chairman, Capital Exhibition

It is important to underline that Eurasia Airshow has fully targeted the Eurasian market in terms of participants and achieved success in this regard. The Eurasia Airshow 2018 was attended from 67 countries, from Russia

to Qatar, Iran to UK, Ukraine to Poland. Worldwide leading companies such as Boeing, Rolls-Royce, Sukhoi, UAC, Antonov, BAE Systems, Rostec, Saab, Qatar Airways, Thales, Honeywell, GE Aviation, Pratt Whit-

ney, Dassault Systems, Goodrich, IRKUT have participated to the Eurasia Airshow 2018. And Turkish Local Industry has successfully represented by Turkish Airlines, Turkish Aerospace, Aselsan, Havelsan, Alp Havaçılık etc. In total 343 companies has contributed.

The Chairman of Capital Exhibition who organize the Eurasia Airshow Hakan Kurt said that "We had an very successful edition fo Eurasia Airshow in 2018. Also Russian companies got really good deals. Especially for this year Russia will be the star of the Eurasia Airshow 2020. Depends on the S-400 air defence systems deal and the upcoming fighter deal there will be very efficient deals on the ground". Kurt continues that Eurasia Airshow will have more innovation, decision maker, delegation and business for their participants.

Key Figures	Numbers
Countries	67
Company	343
Trade Visitor	27000
Public Visitor	106000
Trade Volume	15 Billion USD
Delegation	163
Aircraft on static	81
Flight Demonstration	104
Accreted Media	253
Exhibition Area	410 000 sqm

Source: Eurasia Airshow Final Report

International Festival of Drone Racing

The second international festival of drone racing Rostec Drone Festival will be held in Moscow on August 24 and 25. The event is organized by the All-Russia society of Sports and Physical Training "Trudivye Reservey" (Labor reserves) together with Drone Sports Global and with the support of "Technodinamika" holding of the Rostec State Corporation.



The drone racing festival of will gather the best aces of aerobatics on its site. This year, 32 professional pilots, including from the USA, China, Korea, Germany, Italy, France, Great Britain, Latvia and Poland, will participate in the competition.

"Drone racing is a high-tech sport, it is rapidly gaining popularity all over the world, — commented the event "Technodinamika" General Director of Igor

Nasenkov. — For the "Technodinamika" the development of unmanned aerial vehicles (UAV) is one of the most important areas for us. We are pleased that young people are showing great interest in this area. After all, new technologies are the future, and even now UAV control specialists are in demand in many industries."

By the beginning of the festival a two-level race track with suspended structures and a tunnel

for the spectators, along which everyone will be able to pass and see the race from its epicenter, will be constructed in Gorky Park.

In addition, guests will have the opportunity to try themselves as professional pilots and master drone control on a computer simulator, as well as listen at

master classes from professional pilots about the trends and innovations in the world of unmanned aerial vehicles.

The program of the event will consist of a qualification race, in which both professionals and amateurs will be able to try their hand at passing the race track and objectively assess their own level of piloting, as well as competitions of the strongest Russian and foreign professional racers.

The best Russian pilots are going to compete for the title of the winner: they are 2018 Russia champion Kirill Fedukovich and sixteen-year-old Drone Sports Global team leader Platon Maximov.

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The salient answers on umati

EMO Hannover 2019: since 2017, umati has been on everyone's lips in the international machine tool industry. What at first was designated rather vaguely as an interface standard is now being meaningfully firmed up



Annedore Bose-Munde,
specialist journalist from Erfurt

With application-tailored implementation of the umati interface for the machine tool sector, since 2017 clear contents and technical key data for translation into hands-on reality have been drawn up. What this means specifically, and what visitors can expect to see at the EMO Hannover, are explained by three experts: Götz Görisch is responsible at the VDW for the field of digitisation and Industry 4.0, and is Chairman of the umati Joint Working Group. Bernd Zapf is responsible for Development New Business & Technology at Gebr. Heller Maschinenfabrik GmbH in Nürtingen, while Andreas Wohlfeld is Lead Architect Smart Factory at Trumpf GmbH + Co. KG in Ditzingen, and heads the modelling group of the umati Joint Working Group.

Interview part 1

- Why did the companies and the VDW initiate umati?

Görisch: Following a workshop in the VDW themed around the issues of Industry 4.0, held in early 2017, it clearly emerged that things were definitely moving in terms of standardisation. After some market research, however, it also became clear that for the machine tool sector none of the proposals involved was usable. On occasion, standards had already been agreed between machine tool manufacturers and customers from the automotive industry, but only on a bilateral basis. This meant that very extensive resources in the companies were channelled into developing and maintaining the various customer implementations concerned. The intention is for the global interface umati to replace these, thus also creating capacities for developing new functions with customer benefits.

- Why has OPC UA been chosen as the communication standard?

Görisch: This question was very intensively discussed and examined

during the initial months of the project in 2017. In the past two to three years, OPC UA has been experiencing a veritable boom, and is tacitly acknowledged as the standard in industrial communication. OPC UA utilises internet technologies and protocols. Basically, it specifies how communication is handled. At the same time, sectorally specific expertise enables users to define, in what are called Companion specifications, the details of what is communicated. This means: the specifications provide a kind of sectorally specific dictionary.

- Why is standardisation not being performed at other organisations, like ISO or IEC?

Görisch: OPC UA, as a fundamental specification, is already an IEC Standard (IEC 62541), meaning a standard published by the International Electrotechnical Commission (IEC). The Companion specifications are at present still so development-intensive, and are so urgently required, that traditional standardisation procedures are not fit for purpose here. As



soon as the Companion specifications have stabilised, the long-term aim is to adopt them in IEC/ISO Standards. The VDW is here already actively involved in the preparatory work in ISO/TC 184 – a body at the ISO (International Standardisation Organisation) that draws up standards in the field of Automation Systems and Integration. In the shape of OPC UA, the basic implementations with the corresponding tools are already available, whereas in a normal standardisation process lasting three to five years in the end you still don't have any implementations with the corresponding tools.

- How does the Showcase function?

Görisch: The Showcase at the EMO Hannover 2019 demonstrates that machines from different manufacturers featuring umati can be securely, seam-

lessly and effortlessly connected to the customer's IT systems. For this purpose, we have published a simplified version of the umati Companion specification's draft, with the aim of reducing the amount of implementation work at the individual participants involved. The machines connect themselves to an aggregation server, which at companies is typically installed on the shop-floor level. On this server, the data from all machines are grouped together and made available to an OPC UA client in the destination application. Since we as the VDW cannot build a demosc of this kind for the fair all by ourselves, we are being assisted by T-Systems. At the same time,

— focused on the machine chosen for the Showcase.

- When is the standard scheduled for completion and publication?

Görisch: If it were up to me, before the end of this year. However, we still have a lot of consultation work ahead of us, and at the same time, after submitting the release candidate to the OPC Foundation we have deadlines to comply with for comments and objections. So a realistic date for publication is early 2020. Which doesn't mean that initial implementations can't already be deployed. Always against the background, however, that modifications can and must be made.

- When can actual products be anticipated?

Görisch: I am confident that the machine tool manufacturers will at the EMO Hannover be discussing with their development customers initial specific pilot implementations. The delivery times involved, however, will indubitably extend into next year. At the same time, the requisite testing and certification preconditions have to be put in place by the umati project team – with a view to dependable quality. And not least, the umati product for machine tools and software products has to be given its final description. Against this background, I would assume we'll be seeing the first products next year.

Interview part 2

How the machine tool manufacturers Trumpf and Heller are contributing to the umati Showcase in Hannover is explained by Bernd Zapf and Andreas Wohlfeld.

- What is your company's input for the Showcase at the EMO Hannover?

Zapf: Heller will at the fair be providing a total of four data suppliers featuring the EMO umati data model: one five-axis machine on the Heller stand, two training machines, of which one will be exhibited on the VDW's stand, and another five-axis machine that is installed at Heller's production facility in Nürtingen. These machines will provide the data for the Showcase. In addition, Heller is a member in the VDW's Core Group for designing and trialling the umati interface and for liaising with Siemens.

Wohlfeld: We shall be connecting individual machines to the data hub

as a showcase for the fair. Trumpf is, for instance, providing the VDW with a connected marking laser. Besides the machines in the Showcase, we are supporting the VDW's umati-themed events in our role as a member of the VDW's core group and the modelling group of the Joint Working Group. We are thus underlining our declared aspiration: it was important to the umati group to opt for a technology that offers maximised benefits for the new interface. Thanks to semantic self-description of the data in the information models, the data are not only structured, but provided with meanings, and thus significantly upgraded. And not least OPC UA is the standard chosen for communication in the framework architecture for industry 4.0 (RAMI4.0).

- What's the status of the standardisation work for your focus?

Zapf: The standardisation work is very elaborate, complex and time-consuming. Numerous opinions have to be obtained from different companies. Basically, what's needed is abundant willingness to compromise on the part of everyone involved. Furthermore, an up-to-the-future data record is being developed, which takes time and necessitates a lot of experience. From Heller's viewpoint, the current modelling status covers about 90 per cent of our requirements.

Wohlfeld: Trumpf has for several years now had its own in-house standard in terms of OPC UA. We see umati as the next logical step on the path leading to the cross-manufacturer smart factory. We're working hard on this. Approval of the companion specification by OPC Foundation Products is the next major objective. We should then also be able to put products on the market. Among the vendors, the standard will be successively disseminated. The tempo here essentially depends on how quickly they integrate the standard in their products.

- What specific pilot projects can be demonstrated at the EMO Hannover?

Zapf: Heller will be demonstrating at the EMO, with the machines connected, the entire EMO umati data record. In our estimation, this already covers about 40 per cent of the final data record. We supply this data record with MDA/PDA signals from our present MDA/PDA interface, and in addition have more sig-

nals available which we have so far not been able to deploy. These will be contributed by the umati interface. We will thus in future be creating a link from the present MDA/PDA interface at our machines to the new and future requirements. This can, for example, be the acquisition of machine status conditions.

Wohlfeld: At the EMO, we shall in the framework of the showcase be exhibiting a pilot with the Trumpf machine apps, which among other things visualises the machine status.



From 16 to 21 September 2019, international manufacturers of production technology will be spotlighting smart engineering at the EMO Hannover 2019. Under the motto of "Smart technologies driving tomorrow's production!", the world's premier trade fair for the metalworking industry will be showcasing the entire bandwidth of modern-day metalworking technology, which is the heart of every industrial production process. The fair will be presenting the latest machines, plus efficient technical solutions, product-supportive services, sustainability in the production process, and much, much more. The principal focus of the EMO Hannover is on metal-cutting and forming machine tools, production systems, high-precision tools, automated material flows, computer technology, industrial electronics and accessories. The trade visitors to the EMO come from all major sectors of industry, such as machinery and plant manufacturers, the automotive industry and its component suppliers, the aerospace sector, precision mechanics and optics, shipbuilding, medical technology, tool and die manufacture, steel and lightweight construction. The EMO Hannover is the world's most important international meeting point for production technology specialists from all over the planet. The EMO Hannover 2017 attracted almost 2,230 exhibitors from 44 different countries, and around 130,000 trade visitors from 160 nations. EMO is a registered trademark of the European Association of the Machine Tool Industries Cecimo.

MEMTEC at BIDEDEC-2019

The Middle East Military Technology Conference Examines the Importance of Tech Solutions for Defence



pecially in the West, as reflected in the volume of investment in this field. Technology not only enhances the capabilities of armed forces, but also significantly impacts the quality and effectiveness in preparation for national defence.

Preparations are now in full swing for Bahrain International Defence Exhibition & Conference (BIDEDEC) 2019, scheduled to be held from 28-30 October 2019.

H.H. Major General Shaikh Nasser bin Hamad Al Khalifa, Commander of Bahrain Royal Guard is the Chairman of the BIDEDEC 2019 Supreme Committee, with key support from the Bahrain Defence Force, National Guard and other government Ministries and Authorities.

The Middle East Military Technology Conference (MEMTEC) will be held alongside the upcoming Bahrain International Defence Exhibition & Conference (BIDEDEC), it was announced last month, during the period from 28-30 October 2019. Held under the patronage of His Majesty King Hamad bin Isa Al Khalifa, the Conference will contextualise the exhibition within the regional efforts to modernise capabilities. Once again, the Bahrain Center for Strategic, International and Energy Studies (DERASAT) is the Knowledge Partner for the Conference alongside BIDEDEC.

The Middle East Military Technology Conference (MEMTEC) will discuss matters including the current status and future of military technology, cyber defence strategies, the impact of artificial intelligence on the functions of armed forces, the use of military technology to develop simulation models of war, the impact of military technology on regional conflicts, and the future of military industries in Middle East. MEMTEC aims to showcase how global developments and advancements in the defence sector will reshape conflicts in the Middle East.

H.E. Dr Shaikh Abdulla bin Ahmed Al Khalifa, Chairman of MEMTEC and Chairman of

DERASAT, spoke about the importance of using technology to find solutions and create closer ties. 'Bahrain is a force for peace and global understanding. We have understood well the importance of military alliances to establish security and stability in the world in cooperation with friendly countries. The importance of military technology in the development of armed forces and in responding to threats to national security as well as its role in minimising post-conflict impact is undoubted. MEMTEC will examine the challenges facing this technology.'

During the last few decades, military technology has been a key focus for many countries, es-



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CHINAPLAS 2019

Forum Closed with Tremendous Success and Record of the Attendance



CHINAPLAS 2019 closed its highly successful, four-day run in Guangzhou on May 24. The annual show – held this year at the China Import & Export Fair Complex, Pazhou, in Southern China – attracted 3,622 exhibitors and 163,314 professional visitors from all over the world. More than a quarter of attendees (42,005) were overseas visitors from over 150 countries and regions. The top 15 countries, in terms of visitors, were Brazil, India, Indonesia, Iran, Japan, South Korea, Malaysia, Pakistan, the Philippines, Russia, Singapore, Thailand, Turkey, Vietnam, and the United States.

Currently, the world's economic growth, including international trade, has been slowing down. The escalation of the Sino-US trade dispute, coupled with deterioration in trading conditions, has severely impacted global supply chains. Consequently, Chinese and foreign companies have been exercising increased caution in investments. This combination of complicated internal and external factors – the likes of which have not been seen for many years in China – has served to depress economic growth.

'Under the gloom of such a downturn, there was a gap between the number of visitors to CHINAPLAS 2019 and our previously set goal; we achieved a 5.19% increase compared to the last Guangzhou edition of show two years ago,' said Ada Leung, General Manager of show organizer Adsale Exhibition Services Ltd.

'Exhibitors from all over the world comprehensively showcased a diverse range of cutting-edge innovation and technology. The halls were crowded with visitors. Many exhibitors have

signed new contracts with customers at the show. Generally speaking, participants were very satisfied with the results of joining the show,' Leung added.

Advancing high-quality economic development

Technology is rapidly changing the world, and companies both upstream and downstream are tirelessly pursuing innovation.

At CHINAPLAS 2019, plastics and rubber industries from all over the world came to display their latest wares. Exhibitors made more than 180 global or Asian launches of hot, new technologies.

The exhibition halls exuded an aura of innovation. Just a handful of the highlights included: High/low-dielectric constant modified plastics and other high-performance materials for future 5G communication; lightweight materials designed to enhance new energy vehicles and future travel solutions; along with fiber-reinforced composite materials, graphene-based electrically conductive plastics, high-performance thermoplastic elastomers, addi-

tives to reduce unwanted VOC emissions and to change both the color and brightness of final products, plus liquid silicone and other high-tech materials. Plastics, meanwhile, owing to their versatility, continue to increasingly penetrate into many downstream application industries such as electrical and electronics, automotive, packaging, building materials, medical, sports, and leisure.

In the fair's machinery exhibition area, digital smart manufacturing solutions showcased the implementation of various intelligent manufacturing options, while exhibitors also introduced a large number of high-performance, high-precision advanced equipment and a wealth of advanced molding processes.

Visitors also got to see cost-effective, high-quality, small-batch, diversified production processes, in-mold decorating techniques, as well as polyurethane (PU) in-mold coating and flexible manufacturing technologies, multilayer injection molding and co-extrusion technologies, and automated all-in-one machines, among other high-end sophisticated technologies.

'Going green' is now a core plank in the mission of most companies. The unstoppable trend of the circular economy was apparent at the show, as an abundance of high-performance, environmentally friendly and recyclable solutions were on display.

The theme zones that focused on the circular economy – namely, the 'Recycled Plastics Zone', the 'Recycling Technology Zone' and the 'Bioplastics Zone' – proved hugely popular with visitors.

Concurrent events were plentiful as well. 'Industry 4.0 Factory of the Future', 'Tech Talk', 'Design x Innovation', 'Medical Plastics Connect', and the 'Plastics Recycling & Circular Economy Conference and Showcase' all drew large crowds and featured a vigorous exchange of ideas while nourishing collaboration between various sectors.

Strong praise from exhibitors & visitors alike

During the four days at this plastics and rubber extravaganza, exhibitors and visitors learned from one another about new materials and techniques to enhance the competitiveness of their products in the market. It also offered an opportunity to meet with old friends, make new acquaintances, and look ahead to the industries' future development trends. Exhibitors and visitors alike said they were generally satisfied with the exhibition, as indicated by the following collection of comments from participants.

Comments from some happy exhibitors:

Haitian International Holdings Limited: CHINAPLAS 2019 had more visitors than previous years. It also presented a rich collection of new products, new technologies, and especially automated displays. With an understanding of new technologies, enterprises are more willing to upgrade their equipment and man-

agement. In addition, the efforts that exhibitors put in to the show have increased significantly, to positive effect.

The Chen Hsong Group: We have demonstrated innovative technology and technology tailored for the injection molding industry, and developed and consolidated existing partnerships at the show. We have also recruited a large number of potential customers to lay a good foundation for further market development.



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Toni Bernards, CEO of Battenfeld-Cincinnati (China): the annual event came to a perfect end. CHINAPLAS is an international event where leading companies compete in 'close combat', and is also the best-organized trade fair. As an exhibitor of extrusion equipment, we largely benefit here every year. I saw many old customers at the show and also made some new ones. This is a very good platform on which Battenfeld-Cincinnati has had a complete success. We will come again in 2020.

Eve Cai, China Market Development Manager, Indigo & PWI, Graphics Solutions Business, HP

Inc.: This year at CHINAPLAS in Guangzhou, HP exhibited the Indigo 20000 digital printing machine for the first time, bringing new intelligent and flexible production concepts and solutions to the plastic packaging printing industry. Through advance online



and offline promotion by the organizer, we received many inquiries and concerns from potential customers on site. We look forward to more extensive and close cooperation with Adsale in the future to help the plastic printing and processing industry solve their problems associated with flexible production, fast delivery, and small batch-scale production.

LG Chem: Really thank you for full support from Adsale. CHINAPLAS is a good chance to meet new customers from various countries and is an excellent tool to promote our brand in China. Through this exhibition, it can inspire pride to our local staff.

Furukawa Hiroyuki, General Manager of Asahi Kasei Plastics (Guangzhou) Co., Ltd.: This

year's CHINAPLAS was unprecedented. Through this exhibition, Asahi Kasei made its strength in technology known to many customers, and we benefited a lot.

Rich Altice, President & CEO, NatureWorks LLC: CHINAPLAS is a great opportunity to meet existing and potential customers, allowing us to discuss the important issues facing the growing bioplastics market. We were pleased to showcase the application of several innovative Ingeo-brand biomaterials and see advanced processing equipment technologies that will help expand the use of these materials, helping to promote the global circular economy.

Rave reviews from visitors: Wojciech Tuczkievicz, Head of Group Procurement, CeDo Ltd.: CHINAPLAS is a useful sourcing and networking plat-

form. We can meet all the producers, traders, suppliers of raw materials and machineries related to plastics industry under one roof. Steven Callas, Managing Director, Plastic Container Printers: This was my first time visiting CHINAPLAS and I did agree this is an excellent all-in-one platform where I could source automated solutions, machineries for packaging and build up quality relationships with suppliers.

Mr. Li Junxian, Senior Manager/Environmental Performance Technology Expert of BAIC Motor Co., Ltd.: As the Chinese automobile market gradually matures, consumers begin to pay more attention to the static perception quality of cars, such as color materials, environ-

mental friendliness, lightweight, and exquisite craftsmanship, in addition to focusing on power and economic performance. We need to understand advanced manufacturing processes and material technologies to ensure the competitiveness of the models so that the needs of customers can be met. CHINAPLAS provides a platform for us to easily understand these advanced technologies.

Mr. Zhao Linbing, Senior Engineer, TCL Electronics Holdings Ltd.: We were mainly interested in precision molds, rapid injection molding, mechanical automation, and plastic materials that mimic the look and performance of metal. By communicating with exhibitors, we learned about more advanced equipment and technology, which is valuable as reference for us to reduce costs and set up unmanned chemical plants. So, there you have it. CHINAPLAS 2019 has now ended, but the knowledge gained and contacts made will continue to pay dividends for all involved for some time to come.

CHINAPLAS 2020 will return to Shanghai next spring, with the show set to take place again in the National Exhibition and Convention Center (NECC), in Hongqiao, Shanghai, PR China, from April 21-24, 2020.

DIMDEX and MAST Asia

In line with our team's continuous efforts to monitor and analyse maritime and defence trends, the organising committee of DIMDEX, led by Chairman Staff Brigadier (Sea) Abdelbaqi Al Ansari, have attended MAST Asia 2019 (Maritime/Air Systems & Technologies), the only international defence show in Japan, which took place in Tokyo.

Our Chairman Staff Brigadier (Sea) Abdelbaqi Al Ansari, said commenting on the visit to MAST Asia 2019: 'DIMDEX team is always keen to attend international defence shows. It is a good opportunity to stay updated with the latest trends and meet international key decision makers, as well as potential exhibitors to build solid relationships and invite them to DIMDEX 2020.'

The seventh edition of the Doha International Maritime Defence Exhibition and Conference (DIMDEX 2020) will be held from 16 to 18 March 2020, under the patronage of His Highness Shaikh Tamim bin Hamad Al-Thani, Emir of the State of Qatar, and will be organised by Qatar Armed Forces under the theme 'connecting the world's maritime defence and security community'.



For more information, please follow us on our social media channels – Twitter, Facebook, and Youtube – on @DIMDEXQatar

«Наряду с постоянными усилиями нашей команды по наблюдению и анализу морских и оборонных тенденций, организационный комитет DIMDEX, возглавляемый председателем коллектива бригадным генералом Abdelbaqi Al Ansari, посетил MAST Asia 2019 (Maritime/Air Systems & Technologies), единственную международную выставку в Японии, посвященную вопросам обороны, которая проходила в Токио.

Наш председатель коллектива бригадный генерал (море) Abdelbaqi Al Ansari прокомментировал свой визит на MAST Asia 2019:

«Команда DIMDEX всегда заинтересована в посещении международных мероприятий, посвященных вопросам обороны. Это хорошая возможность

получить актуальную информацию о новейших тенденциях и встретиться с людьми, принимающими ключевые международные решения, а также с потенциальными участниками выставки, чтобы построить с ними устойчивые отношения и пригласить их на DIMDEX 2020».

Седьмая по счету выставка Doha International Maritime Defence Exhibition and Conference (DIMDEX 2020) будет проводиться с 16 по 18 марта 2020, под покровительством Его Высочества Шейха Tamim bin Hamad Al-Thani, эмира Государства Катар, и будет организовано вооруженными силами Катара под девизом «Объединяя мировое сообщество береговой обороны и безопасности».

Для получения дополнительной информации используйте социальные каналы – Twitter, Facebook, и Youtube – на @DIMDEXQatar»

Third Generation Combat Gear

JSC TsNIITochMash (part of Rostec) plans to start R&D work of new third generation combat gear for the military in 2020. This new equipment, replacing the Ratnik combat gear, will be called Sotnik.

The new gear will include anti-mine boots, an anti-thermal suit hiding the soldier from infrared sensors and anti-radar camouflage suit. Other plans include introducing a tactical system using micro UAVs, where the camera stream from the UAV will be projected to the helmet's visor or separate goggles. The electric goggles can also be used to display

tactical orders, maps of the area, etc.

'According to our plans, the third generation gear Sotnik will replace Ratnik already in 2025. This will be fundamentally new kind of equipment integrating the best high-tech designs of Russian enterprises, including those of Rostec. Thanks to the use of innovative materials and

combining the functions of individual elements, the weight of the set will be reduced by 20%, amounting to about 20 kilograms', said Rostec CEO Sergey Chemezov.

Sotnik will use a 'chameleon' material that can be controlled with voltage – a joint design by TsNIITochMash and the Roselectronics holding company. This electrochromic material can change its color depending on the masked surface and its environment. A helmet with this kind of unique coating was demonstrated for

the first time at the ARMY-2018 forum.

Rostec has been supplying the Russian army with a 2nd generation Ratnik combat gear since 2014. This gear consists of five integrated systems: life-support, control and communications, combat, protection and energy supply. It is designed for operations in varying climatic conditions at any time of the day. The equipment is being developed during operations and upgraded components are constantly supplied to the troops.

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