MEDIA RELEASE
EMBARGOED UNTIL 1100H, SST, ON 28 MAY 2014, WEDNESDAY

28 MAY 2014

A*STAR SIMTECH DEVELOPS COLLABORATIVE CAPABILITIES FOR THE OIL & GAS SECTOR IN SINGAPORE

Local Enterprises Leverage on Collaborative Industry Project (CIP) to Seed High-value Gun Drilling Expertise

Singapore - The Singapore Institute of Manufacturing Technology (SIMTech), a research institute of the Agency for Science, Technology and Research (A*STAR), has pioneered an evaluation, comparison and validation method to produce deep, straight holes in a variety of materials for downhole drill pipes, to enable oil and gas exploration venture into greater depths and harsher environments. With assistance from SPRING Singapore, SIMTech has launched an initiative under its Collaborative Industry Project (CIP) scheme to equip companies in the Oil and Gas sector with effective tooling, preparation methods and drilling parameters.

Partnership to Boost Capabilities
Gun drilling is a method for the reliable production of small diameters and a range of depths in downhole drill pipes with straightness and precision. Currently, holes of depths less than 600 to 800mm are fabricated by less than five local Precision Engineering companies and multinational corporations. Holes with diameters of 8mm or smaller and depths beyond 800mm, particularly those fabricated on hard materials, are usually imported. Given the material and complex machinery, an investment can amount to S$1.5 to S$2 million for a 2-metre long machine. Many local enterprises also
lack the integrated expertise in the choice of tooling, materials, process parameters, tool changeover, alignment, regrinding and measurement in deep hole drilling.

The CIP aims to fill this gap. It will enable companies in the PE industry to acquire the required know-how that allows high precision holes to be accurately produced, in partnership with SIMTech and other tooling, coolant and material suppliers. It will also leverage on the strengths and expertise of partners in the supply chain and scientific methods provided by SIMTech to arrive at the optimum solution, in a manner that further reduces the cost and time for development.

Through the CIP, participating companies can maximise the usage of existing resources including machines, workforce, facilities and space to produce surface, subsea, and downhole components using other corrosion-resistant metals. The CIP is also expected to increase throughput, productivity and yield by 45 to 60 per cent through reduced rejects, rework and remake.

**Extending SIMTech’s Expertise to the Industries**

Dr Lim Ser Yong, Executive Director of SIMTech said, “The CIP is significant in raising the capabilities of local enterprises in high-value gun drilling operations to strengthen Singapore’s position as a hub for the Oil and Gas equipment manufacturing industry. Through the collaborative partnership model, SIMTech will develop the key technologies and know-how for high precision gun drilling operations for local companies to gain access to the capital-intensive and highly complex manufacturing of large Oil and Gas exploration tools.”

SIMTech will provide a structured methodology to enable the participating members to evaluate the compatibility of their products in relation to other critical resources in deep hole drilling. Participating companies will be trained and equipped with appropriate capabilities in tool engineering and process design, execution, analysis and inspection through a combination of classroom, laboratory and case-study based training. Leveraging on SIMTech’s capabilities, the performance of the tools and the
effectiveness of the chosen drilling conditions and parameters will be objectively evaluated.

The participating companies of the CIP include local deep hole drilling service providers and international gun drills, specialty material and coolant manufacturers from Singapore, Germany, Japan, Korea, UK, and USA. Each participant will acquire the knowledge and know-how in drill designs, edge polishing, drilling parameters and strategy for unsupported deep hole drilling components of tough material using commonly available machining centres. The complete list of participating companies is in Annex A.

IMAGES:

Unsupported gun drilling of high yield strength Nickel-based superalloys on machining centres

For media enquiries, please contact:
For A*STAR SIMTech:
Ms Lee Swee Heng
Agency for Science, Technology and Research
DID: 6793 8383
Email: leesh@scei.a-star.edu.sg

About the Singapore Institute of Manufacturing Technology

The Singapore Institute of Manufacturing Technology (SIMTech) is a research institute of the Science and Engineering Research Council (SERC) of the Agency for Science, Technology and Research (A*STAR). SIMTech develops high value manufacturing technology and human capital to contribute to the competitiveness of the Singapore industry. It collaborates with multinational and local companies in the precision engineering, electronics, semiconductor, medical technology, aerospace, automotive, marine, oil and gas, logistics and other sectors.

For more information, please visit www.SIMTech.a-star.edu.sg

About Precision Engineering Centre of Innovation (PE COI)

The PE COI is a national initiative launched by SPRING Singapore to help PE SMEs leverage state-of-the-art technology for innovation and growth. Hosted at SIMTech and supported by A*STAR research institutes as well as other institutes of higher learning, PE COI offers a broad spectrum of technologies, manpower training, consultancy, and comprehensive facilities and IT infrastructure targeted to meet the manufacturing needs of local PE companies. PE COI aims to help precision engineering companies leverage technologies for innovations to sustain and advance their business.

For more information, please visit PECOI.SIMTech.edu.sg

About the Singapore Agency for Science, Technology and Research

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that fosters world-class scientific research and talent to drive economic growth and transform Singapore into a vibrant knowledge-based and innovation-driven economy.

In line with its mission-oriented mandate, A*STAR spearheads research and development in fields that are essential to growing Singapore’s manufacturing sector
and catalysing new growth industries. A*STAR supports these economic clusters by providing intellectual, human and industrial capital to its partners in industry.

A*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities, located in Biopolis and Fusionopolis, as well as their vicinity. These two R&D hubs house a bustling and diverse community of local and international research scientists and engineers from A*STAR’s research entities as well as a growing number of corporate laboratories.

Please visit [www.a-star.edu.sg](http://www.a-star.edu.sg)

**About SPRING Singapore**

SPRING Singapore is an agency under the Ministry of Trade and Industry responsible for helping Singapore enterprises grow and building trust in Singapore products and services. As the enterprise development agency, SPRING works with partners to help enterprises in financing, capability and management development, technology and innovation, and access to markets. As the national standards and accreditation body, SPRING develops and promotes an internationally-recognised standards and quality assurance infrastructure. SPRING also oversees the safety of general consumer goods in Singapore.

For more information, please visit [www.spring.gov.sg](http://www.spring.gov.sg)
LIST OF UNSUPPORTED GUN DRILLING CIP PARTICIPATING COMPANIES

1. Amega West

Amega West AP Pte Ltd is a Multinational Company and a subsidiary of Carpenter Technology Corporation. Amega West, with branches in USA, Canada, Middle East and Singapore, develops drilling equipment, non-magnetic and steel subs, stabilisers, etc.

For more information, please visit: www.cartech.com/AmegaWest/

2. Daido Steel

Daido Steel with its origin in Japan, is currently involved in the Singapore Oil & Gas Industry to support the local Oil & Gas industry growth, and to understand the machining solution of Unsupported Gun Drilling using High Nickel Alloy Steel (for example, Inconel 718) for industrial knowledge as well as for its Steel Manufacturing Input.

For more information, please visit: www.daido.co.jp

3. Fong Lee Metal Industries

Incorporated since 1981, Fong Lee Metal Industries is a well established contract manufacturer of oilfield equipment in Singapore. Serving mainly the Oil & Gas industry, it has the capability of providing turnkey solutions to its customers, from project management to engineering, material sourcing, machining as well as assembly and testing.

For more information, please visit: www.flmetal.com.sg

4. Fuchs Lubricants

FUCHS, founded in 1931 as a family firm in Mannheim, Germany, is now a globally operating corporation, and the world's leading supplier of lubricants among the independent companies.

FUCHS offers lubricants for hundreds of applications - including lubricants for car-drivers and motor-cyclists, goods transport, passenger traffic, mining companies, the steel industry, vehicle and machinery construction, the building trade and agricultural equipment.

The group employs more than 3,800 people in Europe and overseas at more than 50 operative companies.
5. Sam Chang Advanced Solutions

Sam Chang Advanced Solutions is a Korean-based SME that provides large format machining services to the Power Plant (Nuclear, Chemical, Thermal) and Renewable Energy sector.

For more information, please visit: [www.sasolution.kr](http://www.sasolution.kr)

6. TBT UK

TBT UK Limited was established in 1984, to sell Deep Hole Drilling Machines that are manufactured by our parent company TBT Tiefbohrtechnik GmbH + Co from Dettingen/Erms, Germany. Since then we have established a facility that offers complete deep hole drilling solutions and houses a Subcontract Deep Hole Drilling Department together with a Tooling Department that provides New Gun drills and offers a Re-Tipping & Re-Grinding Service.

For more information, please visit: [http://www.tbtuk.com/](http://www.tbtuk.com/)