



SIEMENS



Advance
Manufacturing
Transformation
Center

Product and Service Offerings
2020/ 01

Advance Manufacturing Transformation Center

Offerings

Advance Manufacturing Transformation Center Products & Services Offering ¹		
A.	PRODUCTS (Rental)	BRIEF
1.	3D Printers² (Members Only)	Access to Industrial Additive Manufacturing printers through affordable rental rates. Receive hands-on training from our application experts and enable your workforce to be proficient in managing the end-to-end additive manufacturing process.
	<u>Printer Technology</u>	
	Powder Bed Fusion (Metal - PBF)	EOS: M290, M300, P369 Renishaw: AM400 HP: Multi-Jet Fusion
	Direct Energy Deposition (DED)	BeAM Machines: Modulo 250, Modulo 400, Magic 800
	Hybrid	DMG Mori: LaserTec 45
	Filament	Ultimaker: S5, S3
2.	Post Processing Equipment (Members Only)	Access to post processing equipment such as industrial oven, EDM Wirecut, sandblasting machine, hand tools and inspection equipment.
3.	Autonomous Guided Vehicle (AGV)	For training and programming for automated production line operations
4.	Design Labs (Members Only)	2 x Advance Design Labs for rent – fully equipped with Siemens NX CAD/CAM design suite, HEEDS (Generative Design tool), SIMCENTER (simulations) for your seamless end-to-end design needs. Providing user with the AM modules specific to simplify your AM design process. Prototypes can be quickly printed on our desktop polymer printers (Ultimaker S3/S5) in these labs. You will be able to send finalized designs through our MES systems (OpCenter) to replicate actual manufacturing operations.
5.	Design Tools (Members Only)	3 x SolidEdge CAD Design terminals for rent – to allow for fast design capabilities Experience our latest software tool - CAM Pro (creating tool path programs that can be visualized as a Digital Twin prior to actual machine operations).
6.	PlantSim Tool (Members Only)	Access to design tool for factory design optimization (TechnoMatix) Engage our consultants to help optimize your current factory operations and propose automation upgrades to resolve production bottlenecks.
7.	Industry Mall (Platform)	Access our very own Siemens Industry Mall, where you can order your Siemens SINUMERIK controls and many other digital components to support your line integration and automation through IoT.
8.	AM Network (Platform)	Gain access to Siemens AM Network platform which helps integrate AM service providers globally with customers that require support for their 3D design needs. Currently launched in Europe and US and will pilot its Asian launch through AMTC in Singapore.

¹ Subjected to changes; please refer to 2019/2020 Pricing schedules

² Printer models to be confirmed

9.	Product Shop (Members Only)	Access a range of raw materials (metal powders, filament, baseplate) for your printing needs at discounted prices.
B. SERVICES (CONSULTANCY)		BRIEF
1.	Manufacturing Design Consultancy (MDC)	Our consultants will provide initial assessment of your current operations utilizing the SIRI Assessment tool. Subsequently, they will tailor your transition and transformation journey based on piece meal milestones that can help your business move gradually and sustainably to Industry 4.0 status, keeping you competitive in tomorrow's marketplace. Our consultants have a diverse exposure in various industries and have depth in their technical knowledge of integration and automation of manufacturing lines.
2.	PlantSIM Consultancy	Utilizing the Siemens Technomatix software solutions, our consultants would be able to help design and optimize your factory of the future or propose solutions for your current production bottlenecks. You would be able virtually enter the digital twin of your new factory floor through your own eyes (via Virtual Reality glasses) and fine tune your design before executing the build.
3.	3D Design Consultancy	Leveraging our in-house experience in operating additive manufacturing productions lines (>8 years now) and advance manufacturing operations, supported by our NX CAD/CAM design suite, our consultants have the know-how to support you in your 3D designs. Our consultants will also advise on Design for Additive Manufacturing (DfAM), to ensure that the final design is optimized for serial production.
4.	AM Site Readiness Consultancy	Our specialist consultants are able to provide tailored AM readiness assessment for your factory, advising which parts/components would be possible candidates for 3D printing.
C. COURSES		BRIEF
1.	C-Suite Training Program (3-days)	Conducted by our accredited partner TUM (Technical University of Munich) as part of their IDEAS program and is supported by Siemens MDC consultants. Course is targeted for Senior Management to provide them with the knowledge and tools that would enable them to strategically design their Industry 4.0 transformation journey.
2.	Industrial Transition Program (Phase 1)	<i>(To be finalized) Series of modular courses to guide companies in a structured format. Targeted at the company's functional groups, with objective of upskilling. Modules would conclude with implementing small scale improvement projects.</i>
3.	NX CAD Training (5 days)	Course will provide basic training for NX CAD (with AM Modules) for advance designs, as well as exposure to SIMCENTER (our simulation tool).
4.	'NX Goes MT Expert' Training (Certification Course) (2 weeks)	Course will focus on Machine Tool Systems (MTS) where the post processing of the manufacturing is carried out on CAM and CNC equipment. Participants will be trained to program machine tool paths with NX CAM and simulate the final program on a Virtual Machine (Digital Twin) before execution on an actual CNC machine (based on Siemens SINUMERIK product). On completion, participant will receive Siemens Certification in Mechanical & Manufacturing Systems .
5.	SolidEdge CAD Training (Certification) (3 days)	Course will equip participants with the knowledge and basic skills to carry out 3D modelling and design work using the SolidEdge platform.

		On completion, participant will receive SolidEdge Proficiency Certification .
6.	AM Operations Workshop (3 days)	Course will provide participants with an overview of the operations and management of an additive manufacturing line, from design file management, raw material handling, 3D printing, post processing and to final quality inspection. Participants will get hands-on experience on managing the line, including waste disposal, and aspects of Design for Additive Manufacturing (DfAM).
7.	Printer Operational Training (Various) (1 week)	Conducted by our equipment partners, participants will get operational training on the chosen AM printer model/technology to enable them to operate this equipment independently.
8.	SITRAIN (Various) Online option	Access to suite of Siemens Industry Training (covers in the areas of PLCs, Drives, Controls, HMI, Networks, Process Control, Analyzers and Instrumentation, Electrical and Power Systems, Safety and more. such as Totally Integrated Automation (TIA), Industry Automation–SIMATIC IT
D. EVENTS		BRIEF
1.	Quarterly Seminars (Free for Members)	Attend our Center's quarterly advance technologies (1-day) forum where we share and exchange new ideas and best practices.
E. SITE VISITS (Members Only)		BRIEF
1.	AMTC Tour (Open to Public) (½ Day; 1 day)	AMTC Workshop Tours will be available for bookings (i) ½ day sessions will be a showcase of facility operations (ii) Full day sessions will include hands-on printing exposure
2.	Additive Manufacturing Experience Center (AMEC) (Erlangen, Germany) (Members Only)	Visit Siemens Additive Manufacturing Experience Center (AMEC) and experience cutting edge showcase of Additive Manufacturing technologies. Siemens has been appointed by the German govt to lead the AM industrialization initiative in Germany (IDEA) (July 2019).
3.	Digital Enterprise Experience Center (DEX) (Erlangen, Germany) (Members Only)	Visit one of the pilot Siemens Digital Enterprise Experience (DEX) Center in Germany. Showcasing the extensive portfolio of industrial digital solutions that enable advance manufacturing.
4.	Amberg (DI) Factory (Amberg, Germany) (Members Only)	Visit Siemens advance parts manufacturing facility in Germany. Equipped with the latest digital solutions and products, embracing the 4 th Industrial Revolution.
5.	Materials Solutions (UK) Ltd (Worcester, UK) (Members Only)	Visit Siemens Advance Additive Manufacturing Facility in the UK. 1 st Additive Manufacturing Facility in the UK with NADCAP (Welding) Certification and 6 th globally, to support the aerospace industry in metal parts additive manufacturing.
F. ECOSYSTEM PARTNERS		BRIEF
1.	Certification Services	Our partners will be able to support you on all your certification needs; covering various industries.
2.	Quality Services Bureau	We have a pool of quality services bureaus that can support your 3D printed parts supply needs.
3.	Research Institutions	Our network of research partners provides avenues for specific research needs such as new material development.
4.	Metal powder suppliers	Our quality raw material suppliers are able to support you supply needs for 3D printing.

Membership at AMTC

We offer 3 categories of Membership at AMTC: Industrial, Partner, Auxiliary.

Admission to these categories would depend on the company profile as follows:

Category	Profile(s)	Driver(s)	Benefit(s)
Industrial	(Advance Manufacturing) Existing Industrial production and manufacturing facilities	Aspiring to transition & transform to advance manufacturing; upgrade systems Achieve better production efficiency and yield	Customized, tailored transformation journey Access to advance manufacturing equipment ³ Access to the latest digital technologies
	(Additive Manufacturing) Product Development (R&D) team	Optimize and implement new product design	Discounted prices from partner vendors (e.g. powder)
Partner	(Advance Manufacturing) Advanced Industrial manufacturing equipment provider	Showcase equipment in an advance operational production site Access to regional markets	Showcase equipment as part of advance manufacturing line Access to local and regional industrial projects
	Develop, improve products offerings (e.g. 3D Printer OEM, Post processing equipment OEM, CNC, WireCut EDM)		Design products in a co-creation environment
Auxiliary	Products & Services offerings supporting advance manufacturing eco-system (e.g. Research Institutions, Certification bodies, AM Service bureau etc.)	Keen to promote product/service in ASEAN	Exposure to targeted industrial customers Collaborative Ecosystem for developmental work on advance manufacturing solutions

For more information on AMTC Membership, please visit our website www.siemens.com.sg/AMTC

To request for **AMTC Membership application forms**, please email us at infoadvancemanufacturing.sg@siemens.com



³ Range of Additive Manufacturing printing technologies, post processing line