ADDITIVE MANUFACTURING (AM)

Core Competences in AM

- z Supplier for the AM process
- a AM Machine Manufacturer
- n AM User
- s AM Service Provider
- f AM Research
- p Peripheral Manufacurer
- t Using AM-Parts, No AM Production

- x Products - Manufacturer, Supplier
- o User with Competences, Knowhow

AM - Competences		Pre-Print				Materials for AM							Process Technology for AM															Use of AM					AM - Services						Type of AM-Parts							Application Fields							
company name	Core Competence	Scanner for AM	Data-Management	CAD-Tools	...	Metall Powder	Plastic Powder	Filament	Granulate	Fotopolymer	New Materials	....	Laser Beam Melting (LBM)	Selective Laser Sintering (SLS	Laser Deposition	EBM (E-Beam)	FLM (FDM) / AKF	PJM (Polyjet)	Binder Jetting	SL (Stereolithografie)	LLM (LOM)	Hybrid - Process	Periphery	Control Systems	Components	Quality Check	....	Machine Manufacturer	AM Part Production	Finishing of AM-Parts	Contract Manufacturing	....	Training, Instruction	Consulting, Techn. Support	Standardisation	Data Protection	Construction	....	Metall	Plastics	Models	Tools	Single parts	Spare parts	Service	....	Automotive	Aircraft	Medical Engineering	Tooling Machines	Electronics	Process Technology	Mech. Engineering	.....
3YOURMIND GmbH	s	o	x	x									o	o		o	o	o	o	o								o	o	x		x	x		x	x		x	x	x	x	x	x			o	o	o	o		o	o	
A. Steinmeyer GmbH & Co. KG	n			o										o														o											x			x								x		
A.MANNESMANN MASCHINENFABRIK GMBH	p																								x							o													o	o	o	o			o	
Aalberts Material Technology GmbH	s																												x	x	13	x	x																		
ACAM	s																															x	x																			
Additive Industries	a	o	x	o		o							x										x	x	x	x	x	x	x	x		x	x		x			x			x					x	x	x	x		x	x	
Alfred Kärcher SE & Co. KG	n		o	o			o	o		o				o			o	o								o		o	o			o			o				o	o	o	o	o								o	
Alupress Tooling GmbH	n		o	o		o							o						o								o	o									o	o				o			o						o	o	
ANDRITZ AG	n	o	o	o		o	o	o		o		1	o	o			o	o	o	o		o						o									o	o	o		o										o	
ANTARES Life Cycle Solutions GmbH	s	x	o	x		o	o	o					o	o	o		o	o	o	o								o	o	o		o	x			x	x	o	o		o	o	o	o		o					o	o	
ARBURG GmbH + Co KG	a		x	x					x		x						x						x	x		x	x	x				x	x	x				x								x	x	x	x	x	x	x	
AS-Schneider	t			o																																	o	o	o		o											o	
AZO GmbH +Co.KG.	p					o	o		o				o	o									x	x														o	o														
B&R Industrie-Elektronik GmbH	z																							x	x																											
BASF SE	n	o	o	o		o					o		o		o							o						o	o			o	o	o		o			o		o	o	o	o						o	o	
Gebr. Becker GmbH	z												o		o							o	x		2								x																			
Bosch Rexroth AG	z		x	x	x								x/o					x/o	x/o				x/o	x/o	x/o	x/o		x	x	x	x				x	x		x	x		x	x	x	x	x				x		x	x	x
BST eltromat International GmbH	n			o										o			o											o									x			o		o	o									
DigiFabster Inc.	s		x	x									o	o	o	o	o	o	o	o	o							o	o				x		x	x		o	o	o	o	o	o	o		o	o	o	o	o	o	o	
Direct Manufacturing Research Center	f	o	o	o		o	o	o			o		x	x			x		x							o		x				x	x	x	x	x		x	x	x	x	x	x	x		x	x				x	x	
DMW Maschinen- und Werkzeugbau GmbH	n					o					o		o	o	o														x								o			o							o				o	o	
Eckelmann	z																							x		o																						o	o	o	o			o	
Eisenhuth GmbH & Co KG	n							o			o						o								o			o	o								o	o		o							o	o		o			o	
Erasteel	z					x					o																o																											
ExOne GmbH	a	o		o		x					o	x							x							x	x	x	x		x	x					x							x	o	o	o	o	o	o	o	
Festo AG&Co.KG	n		o	o		o	o	o					o	o			o			o			o					o	o								o	o	o	o	o											o
Fraunhofer IAPT Hamburg	f	x	o	o		o	o				x		x	x	x	x	x	o	o	o		o	o	o	o	o		o	x	o		x	x	x		x		x	x	x	x	x	x		x	x	x	x	x		x	
Fraunhofer ILT	f	o				o	o			o	o		o	o	o					o			o	o	o	o	o		o		o			o		o		x	x	x	x	x	x	x									
Fritz-Süchting-Institut für Maschinenwesen der TU Claustha	f	o	o	o		o		o			o			o			o		o				o		o			o	o			o		o		o		o	o	o	o	o								o	o	
GE Additive	a	o	o	o		x					x		x			x			x				x	o	o	x	x					x	x	x		x		x/o								x	x	x	x	x	x	x	x
GEFERTEC GmbH	a											3										x					x	x		x		x	x			x		o		o		x	x	x		x		x	x		
GMA-Werkstoffprüfung GmbH	s																									x																										
Grenzebach Maschinenbau GmbH	p																						x	x																													x
H & H Gesellschaft für Engineering und Prototypenbau mbH	s	x	x	x		x	x	x			x		x	x			x			x								x	x	x		x	x			x		x	x	x	x	x	x		x	x	x	x	x	x	x	
H.C. Starck Surface Technology and Ceramic Powders Gm	z					x					x		x	x	x	x						x												x												x	x	x	x	x	x	x	
HAMUEL Maschinenbau	a	o	o	o		o									x							x	o	o	o			x				x	x			x		x			x						o		x				o
Hans Weber Maschinenfabrik GmbH	a			o					o								x							o		x	x					o			o		o	x			o	o									o	
Harmonic Drive AG	z																								x		x						o			x													x	x		x	
Hasenauer&Hesser GmbH	s	x	x	o			o							o									x						x		x	x			x			x	x			x			o	o	o	o	o	o	o	
Hauhinco Maschinenfabrik G. Hausherr, Jochums GmbH &	n			o		o					o		o										o				o	o								xo				x	x										x	
Heraeus Deutschland	z	o	o			x					x	11	o			o			o				o	o	o	o		x			12					o		x		x	x	x	x			x	x	x	x	x	x	x	
Herding GmbH Filtertechnik	p					o	o				o		x	x	x	x						x	x	x	x		o	o			x						x																
Hermle Maschinenbau GmbH	a			o		o					o											x					x	x		x		x			x		x								x	x	x	x	x	x	x	x
HEROSE GmbH	t			o																																	o	o	o		o											o	
Hirschvogel	n	o	o	o		o		o			o		o		o		o		o						x	x		x	x	x		o	x	x			x	x	x	x	x	x	x		x			x			x	
Homag Group	a																o																			o												x	x					x	
Hosokawa Alpine AG	a					o	x						o	o	o							o	x							o							o														x		
innoCast GmbH	n	o	o	o			o		o			o		o				o	o									x	x	x								x			x		x	x				x	x		x		
Institut für Werkzeugmaschinen und Betriebswissenschafte	f	o	o	o	x/o	o	o				o		o	o		o	o		o				o		o	o		o				x	x	o		x/o		x	x	x	x	x	x	x		x	x	x	x	x	x	x	

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International Performance Research Institute gGmbH	f																															o	o									o	o										
IST METZ GmbH	p																								x																	o	o									o		
JOMATIK GmbH	s			o			x							x											x			x	x	x		x	x			x			x	x	x	x	x			x		x	x	x	x	x	
KASTO Maschinenbau GmbH & Co. KG	p																						x															o	o										x				
KBA-FT Engineering GmbH	t			o																																		o	o			o	o	o								o	
Kegelmann Technik GmbH	s		o	o		o	o			o	o		o	o						o			o			o		x	x	x		x	x			x		x	x	x	x	x	x	x		o	o	o	o	o	o	o	
Keller Lufttechnik GmbH + Co. KG	p												x	x	x	x			x			x	x														x									x	x	x	x	x	x	x	
Krause DiMaTec GmbH	s		o	o		o	o	o			o		o	o			o			o								x	x	x		x	x			x		x	x	x	x	x	x	x					x		x	x	
Krauss Maffei	n			o		o	o	o		o	o		o	o			o	o		o								o	o			o	o			o		o	o	o		o	o									o	
KSG Leiterplatten GmbH	n																																																	x			
KSB AG	n		o	o		o		o					o						o									o				o	o	o		o		x	x	x		x	x									x	
Lechler GmbH	p		o	o			o	o										o	o									o											o			o									o		
LIGHTWAY GmbH & Co. KG	s	o	o	o		o					o		o									o	o	o	o	o		x	x	x		x	x			x		x		x	x	x	x	x		x	o	o	o	o	o	x	
Linde AG	z					o						7	o	o	o								x		o			x	o			x	x	o				x								o	o	o	o		x		
LMD GmbH & Co. KG aA	s		o	o			o				o			o									x	x	x	x		x	x	x		x	x	x	o	x			x	x	x	x	x	x		x	x	x	x	x	x	x	
MAN Diesel & Turbo SE	n												x		x											x		x								(o)		x					x	x	x							x	
MAPAL Dr. Kress KG	n	o	o	o		o							x										o			x		x										x			x	x				x	x		x			x	
Materialise GmbH	s	o	x	x		o	o	o		o	o		o	o			o	o	o	o			o	x	x	x	o	x	x	x		x	x	x		x		x	x	x	x	x	x	x		o	o	o	o	o	o	o	
MBFZ toolcraft GmbH	n	o	o	o		o					o		o		o								o	o	o	o		x	x	x	x	x	x	x		x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x
Murtfeldt Kunststoffe GmbH & Co. KG	n	o	o	o			o	o	o		o		o	o			o						o					x	x	x			o			o			x	x	x	x	x			x			x	x	x	x	
Nanoval GmbH & Co KG	z					x					x		x	x	x	x															8							x								x	x	x	x	x	x	x	
NETZSCH Trockenmahltechnik GmbH, Hanau	p					o	o																x		x		o			o								o															
O.R.Laser	a	x	x	o		x							x		x							x					x			x		x	x					x						x		x	x	x	x	x	x	x	
Ohnhäuser	s		o	o		o							o													o		x	x	x								x				x					x					x	
Oskar FRECH GmbH + Co. KG	s		o	o		o							o															x	x	x						o		x		x	x	x	x						x		x	x	
Parker Hannifin Manufacturing Germany GmbH	n			o		o		o		o			o				o	o										o								o		x				x					x					x	
PEM RWTH Aachen	f		o	o				x		x	x			x			x	x					x	x	x	x	o	x	x			x	x			x		x	x	x	x	o	o	o		x			x			x	
Phoenix Contact	n	x	x	x		x	x	x	x	x	o		x	x			o	x	x	x			x	x	x	x	x	x	x	x		x	x	o	o	x		x	x	x	x	x	x	x		x		x	x	x	x	x	x
Piab Vacuum GmbH	p					o	o		o		o			o									x					o											o	o		o									o	o	
Poligrat	s																												x									o															
Praxair Surface Tecnologies GmbH	z					x							o	o	o	o			o																											x	x	x	x	x	x	x	
PROTIQ GmbH - A Phoenix Contact Company	s	x	x	x		o	o	o	o	o	o	11	o	o			o	o	o	o			o	x	x	o	o	x	x	x	5	x	x	x		x	12	x	x	x	x	x	x	x	10	x	x	x	x	x	x	x	6
Proto Labs GmbH	s		o	o		o	o	o	o	o	o			o				o	o	o						o		x	x	x		o	o					x	x	x	x	x	x	x		x	x	x	x	x	x	x	
PROTOTEC GmbH & Co. KG	n	x	o	o		o	o	o		o		o	o	o			o			o			o	o	o	o		x	x	x		o	x	o		o		x	x	x	x	x	x	x		x	o	x	x	x	x	x	
PTW TU-Darmstadt	f					o							o									o						o	o				o					o										o	o		o		
Realizer	a	o		x		o							x														x					x	x			x		x		x	x	x	x	x		x	x	x	x		x	x	
Renishaw GmbH	a		x	x		x					x		x	x						x			x			x	x	x	o	x		x	x	x		x	4	x	x	x	x	x	x	x		5	x	x	x		x	x	6
Robert Bosch GmbH	n			o		o	o				o		o	o	o	o	o	o	o	o				x	x			o	o									x	x	x	x	x	x			x						x	
robomotion	t																																o			o			x		x	x	x	x								x	
Rosswag GmbH, Division Rosswag Engineering	n	o	o	o		xo					xo		o									o	xo	o	xo	xo		xo	xo	xo		xo	xo	xo	o	xo		xo		xo	xo	xo	xo	xo		xo	xo	xo	xo	xo	xo	xo	
Ruwac Industriesauger GmbH	p												o	o	o	o							x										o	o																			
Sartorius AG	t			o									o	o			o													o			o					o	o									x		x		x	
SAUER GmbH	a			x		o									x							x					x					x	x					x			x	x	x	x		x	x		x		x	x	
Schaeffler Technologies AG & Co. KG	n					o	o	o		o			o	o			o	o		o		o	o		o	o		o	o				x	x				o	o	o	o	o	x	x		o	o	o	o		o	o	
Schneider Prototyping GmbH	s	o	o	o		o	o			o				o			o	o	o	o			o			o		x	x	x			x		o	o		x	x	x	x	x	x	x		o	o	o	o	o	o	o	
Schneider Electric	z																						x	x	x			o	o							o										o			o	o		o	
SchuF	n		o	o		x		o					o				x		o									x								o		x	o	o		x									o	o	
Schuler Pressen GmbH	n			o		o	o						o		o		o		o									o				o				o		o	o	o	o	o	o	o		o	o		o			x	
SCHUNK	n		o	o			o							x	o													x	x	o		o	o			o		o	x		x	x	x			x		x	x	x		x	
Siemens AG	z		x	x	x	o	o	o	o				o	o	o		o					o	x	x	x			x	x	o	x	x	x	o	o			x/o	x/o	o	o	o	o	o								x	9
Simufact Engineering GmbH	s	o	x	x									o	o	o	o		o	o							o		o				x	x													x	x	x	x	x	x	x	x
SKF LS Germany GmbH	a			o																			o	o										o		o		x	x		o	x	x	o		x	o		x	o	x	x	
SMS group GmbH	a		o	o		x							o	o	o		o	o							o	o					8		o			o		o	o		o	o	o	o					x		o	x	
Starfort	f								o								x										x												o			o	o									o	
Steinbach AG	s			o								10	o							o								x		x			x			x				x	x	x	x			x	x	x	x	x	x	x	

AM - Competences	Pre-Print					Materials for AM							Process Technology for AM														Use of AM					AM - Services						Type of AM-Parts							Application Fields						
Firmenname	Kernkompetenz (s.o.)	Scanner f.AM	Datenmanagement	CAD-Tools	...	Metallpulver	Kunststoffpulver	Filament	Granulat	Fotopolymer	Neue Werkstoffe	....	LBM (SLM)	Selective Laser Sintering (SLSLS (SLS)	Laserauftrag	EBM (E-Beam)	FLM (FDM) / AKF	PJM (Polyjet)	Binder Jetting	SL (Stereolithografie)	LLM (LOM)	Hybridanlagen	Peripherie	Steuerungen	Komponenten	Q-Kontrolle u.a.	....	AM Anlagenbauer	Produktion mit AM	Finishing v. AM-Teilen	Lohnfertigung	....	Schulung	Beratung	Normung	Datenschutz	Konstruktion	...	Metall	Kunststoff	Modelle	Werkzeuge	Einzelteile	Ersatzteile	Reparatur	....	Automotive	Luftfahrt	Medizintechnik	Werkzeugmaschinen	Elektronik	Verfahrenstechnik	Allg. Maschinenbau	.....
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THALETEC GmbH	t	o											o				o											o					o					o	o	o			o	o							o	
TLT-Turbo Gmbh	t			o		o					o																				o	o			o		o	o	o	(o)	o	o	o								o	
Trelleborg Sealing Solutions	t			o																												o			o			x	x	x		x	x	x					x		x	
trinckle 3D GmbH	z	o	x	x									o	o			o	o	o	o													x			o	x										o	o	o	o		o	o	
Trovus Tech	n		o	o		o		o			o		o				o						o	o	o	o		x	x	x		x	x	o	x	x		x	x	x	x	x	x	x		o	o		o	o	o	o	
TRUMPF Laser- und Systemtechnik GmbH	a	x	o	o		o							x		x							o	(x)	(x)	x		x	o	o	o		x	x	o	o	o		x			x	x	x	x		x	x	x	x	x	x	x	
ULT AG	p					o	o				o		x	x	x	x						x	x	x	x		x	o	x	o		o	o			o		o	o														
UNI Duisburg-Essen / RTC	f	x	x	x		x	x	x			x		x	x			x						x					x	x	x		x	x	x				x	x	x		x	x										
ViscoTec Pumpen- u. Dosiertechnik GmbH	z					o					o	o					o							x	x		x						x						o			o	o			o	o	o	o	o	o	
Vitronic Dr.-Ing. Stein Bildverarbeitungssysteme GmbH	p	o																							o													o	o		o					o						o	
Voith GmbH	n												o												o																													
Volkswagen AG	n		o	o		o	o				o		o	o	o		o	o	o	o			o					o	o							o		x	x		x	x	x	x		x			x		x	x	
WALTER EWAG	n	(x)	(x)	(x)																				o	o			o	x												o								o					x
Weeke Bohrsysteme GmbH	n																o																			o											x	x		o				
WIBU-SYSTEMS AG	p		o																				x	o	o										x											o	o	o	o	o	o	o	
WITTENSTEIN AG	n		o	o				o		o							o	o								o												o	o											o	o		o	
Wittmann Robot Systeme GmbH	n		o	o		o	o	o						o					o				o		o			o										o	o	o		o	o	o		x		x	x			x	

1 = Aluminiumoxid
2 = Gasumwälzung / Absaugung
3 = Inertgas-Gebläse
4 = Simulation
5 = Serie
6 = Consumer (Sport , Freizeit; Baubranche; Design/Schmuck)
7 = Prozessgase
8 = auch Verdüsungsanlagen f. Metallpulver
9 = Energieerzeugung
10 - Zirkon- und Aluminiumoxid
11 = Legierungsentwicklung
12 = Prozesse, Simulation
13 = Oberflächenbehandlung, HIP, Wärmebehandlung,
14 = Metallschweißdraht

1 = aluminium oxid
2 = Inert gas recirculation / pneumatic powder conveying
3 = welding wire
4 = simulation
5 = serial production
6 = consumer (sports, design, decoration, toys)
8 = also atomizing metall powder
9 = power generation
10 = zirconium- and aluminium-oxide
11 = alloy developement
12 = processes, simulation
13 = surface treatment, HIP, heat treatment