

Progress Report

June 2017



Cornet AM 4 Industry - Progress

		Progress M3 19%	Progress M6 35%	Actual/ Final 35%	Comment
WP1	PSP Code	Project Management			
1.1	Project Start	100%	100%	100%	
1.2	Project administration	13%	25%	25%	
1.3	Project coordination	13%	25%	25%	
1.4	Project controlling	13%	25%	25%	
1.5	Project end				
WP2	PSP Code	Quality and process assurance in advance of the manufacturing process			
2.1	Literature update	100%	100%	100%	
2.2	Theoretical analysis of characterisation criteria	50%	100%	100%	
2.3	Experimental on fresh feedstock	20%	100%	100%	
2.4	Experimental on used feedstock (metal powder only)		10%	10%	
2.5	Deliberate variation of criteria				
2.6	Correlation of feedstock criteria, monitoring data and existing material defects		15%	15%	
2.7	Derivation of feedstock quality criteria				
WP3	PSP Code	In-Process Quality			
3.1	Evaluation of detection methods	25%	85%	85%	
3.2	Identification of process deviations	15%	90%	90%	
3.3	Identification of detectable major deviations		10%	10%	
3.4	Correlation of monitoring data and existing material defects				
WP4	PSP Code	Quality and process assurance in the finishing process			
4.1	Definition of reference features	75%	75%	75%	Cases will be considered
4.2	Design of AM for finishing		20%	20%	start in M4
4.3	Finishing of reference features		10%	10%	
4.4	Case studies	20%	25%	25%	#BEZUG!
4.5	Precision Model				
WP5	PSP Code	Cost-benefit-model and impact on the market			
5.1	Analysis of requirements and existing models	20%	70%	70%	
5.2	Development of the assessment system	3%	30%	30%	
5.3	Verification of the assessment system				
WP6	PSP Code	Design Approach			
6.1	Analysis current Sirris-approach	100%	100%	100%	questionnaire ready
6.2	Expand design approach		25%	25%	
6.3	Generate benchmark samples	25%	25%	25%	
6.4	Generate integrated design approach				
6.5	Case studies		25%	25%	
6.6	Design handbook				
WP7	PSP Code	Plastics			
7.1	Part specifications	100%	100%	100%	
7.2	Experimental filament production	20%	80%	80%	
7.3	Testing of filaments		80%	80%	
7.4	Data pre-processing and build strategy	40%	40%	40%	
7.5	On-line quality control for FFF				
7.6	FFF process modifications	10%	50%	50%	
7.7	Controlled product quality				
WP8	PSP Code	Injection Mould			
8.1	Definition of the part geometry	100%	100%	100%	
8.2	Simulation	17%	25%	25%	
8.3	Design mould inserts	13%	50%	50%	WP already started, cause of the use cases
8.4	Quality of the surface				
8.5	Manufacturing of the mould inserts				
8.6	Injection moulding				
8.7	Economic Aspects				
WP9	PSP Code	Ceramics			
9.1	Identification of UC needs	62%	66%	66%	
9.2	Literature update	20%	40%	40%	
9.3	Experimental sample evaluation	13%	26%	26%	
9.4	Material & process development	22%	28%	28%	
9.5	Quality and deviations				UC is delayed because of starting delay problems. Work is ongoing, definitions to be finished asap. No delay for the project expected.
WP10	PSP Code	Dissemination			
1.1	Web Page	50%	70%	70%	
1.2	Flyer	10%	33%	33%	
1.3	Articles for Journals		25%	25%	Article MC-Report 3/2016
1.4	Dissemination Events		25%	25%	AT - VÖK - 3D-Printing Event
1.5	Translation of documents				

Cornet AM 4 Industry - Milestoneplan

1	PSP Code	Project Management	Dates Planned	Dates R M3	Dates R M6	Actual	Achieved	Comment
	M1.1/1	SC and UC Kick Off Meeting held	M1			M1		
	M1.5/1	Final Meeting done	M24			M24		
2		Quality and process assurance in advance of the manufacturing process						
	M2.1/1	Agreement on 4 criteria to be investigated made	M5		M6	M6		
	M2.5/1	Agreement on 2 deliberate deviations per criterium onto the feedstock made	M7			M7		
3		In-Process Quality						
	M3.1/1	Agreement on monitoring systems for further investigations	M5			M5		
	M3.3/1	Agreement on major deviation to be investigated	M11			M11		
4		Quality and process assurance in the finishing process						
	M4.2/1	Agreement on design options for reference features	M5	M7	M9	M9		
	M4.3/1	Finished Specimens	M22			M22		
5		Cost-benefit-model and impact on the market						
	M5.1/1	Allocation of requirements and existing methods	M5		M8	M8		
	M5.2/1	Assessment system	M10		M18	M18		
	M5.3/1	Specification approach	M21			M21		
6		Design Approach						
	M6.1/1	Selection and agreement of needs for the industry	M3	M6		M6		
	M6.3/1	Selection and agreement on benchmark samples	M11			M11		
	M6.4/1	Design approach ready for test on case studies	M18			M18		
	M6.6/1	Design approach handbook ready	M24			M24		
7		Plastics						
	M7.1/1	Part specifications documented	M1			M1		
	M7.3/1	HQ filaments produced and tested	M4	M5		M5		
	M7.4/1	HQ FFF parts fabricated	M8		M9	M9		
	M7.7/1	HQ FFF parts tested and quality documented	M23			M23		
8		Injection Mould						
	M8.1/1	Part geometry defined	M2			M2		
	M8.3/1	AM Mould insert designed and ready to print	M16			M16		
	M8.5/1	AM Mould insert ready to test	M17			M17		
	M8.7/1	Injection moulding tests with both inserts completed, Part quality determined	M21			M21		
9		Ceramics						
	M9.1/1	Use Case needs analysed and defined.	M4			M4		
	M9.6/1	Assessment for all UC manufactured regarding technical and economical feasibility.	M24			M24		
10		Dissemination						
	M10.1/1	Web page is online	M3			M3		
	M10.5/1	1st versoin of flyer completed	M6			M6		

Cornet AM 4 Industry - Deliverables

1	PSP Code	Project Management	Dates Planned	Dates R M3	Dates R M6	Actual	Achieved	Comment
	D1.2/1	Consortium Agreement	M1			M1		
	D1.3/1	Minutes Of Meeting	M1			M1		MOM 2nd SCM done
	D1.4/1	Progress Reports	M3			M3		PR M6 done
2		Implement e-monitoring system at companies						
	D2.3/1	Specimen parts	M6			M6		
	D2.4/1	Specimen parts	M10			M10		
	D2.5/1	Specimen parts	M14			M14		
	D2.7/1	Defect Catalogue	M24			M24		
3		Machine/Process benchmark and optimisation						
	D3.4/1	Specimen parts	M18			M18		
	D3.4/2	Defect catalogue	M24			M24		
4		Simulation of production lines with the focus on energetic behaviour						
	D4.3/1	Finished specimen parts	M22			M22		
	D4.4/1	Finished case study parts	M22			M22		
	D4.5/1	Deliverable: Precision model (xls)	M24			M24		
5		Energy Planning						
	D5.2/1	Generally valid assessment system for the benefit analysis of additive manufacturing	M10		M18	M18		
	D5.3/1	Valid approach for the specification of the general system	M21			M21		
	D5.3/2	Valid use-case-specified models	M21			M21		
6		Energy Management System (EnMS)						
	D6.3/1	Printed Parts	M13			M13		
	D6.3/1	Design approach handbook	M24			M24		
7		Dissemination						
	D 7.1/1	Part specification document	M2			M2		
	D7.3/1	HQ filaments produced and tested	M5			M5		
	D7.7/1	HQ FFF parts based on part specs fabricated and tested	M23			M23		
8		Injection Mould						
	D8.3/1	Detailed design of mold insert	M16			M16		
	D8.5/1	Mould inserts available	M17			M17		
	D8.6/1	Test specimens	M22			M22		
9		Ceramics						
	D9.3/1	Test specimen and samples	M12			M12		
	D9.4/2	Test specimen	M18			M18		
10		Dissemination						
	D10.1/1	Web Page	M3			M3		
	D10.2/1	Flyer	M6		M12	M12		
	D10.3/1	Articles in Journals	M1			M1		

