



# “54th CIRP Conference on Manufacturing Systems, 2021”

Title: **Towards Digitalized Manufacturing 4.0**

Athens, 22-24 September 2021



## CIRP CMS 2021 Preliminary Program

### Program-at-a-glance

Day 1: 6 Parallel Sessions 08:30 – 17:10 CET\*

Day 2: 6 Parallel Sessions 08:30 – 16:40 CET

Day 3: 5 Parallel Sessions 08:30 – 17:40 CET

\*Time zone CET (Central European Time)

- Paper Presentation: 15 min
- Questions & Answers (Q/A): 5 min
- Manuscript number is the Elsevier ID (e.g. PROCIR-D-XX-XXXXX)

### Submission Statistics & Publication Information

- Accepted Papers – 332
- Submissions from – 35 Countries
- Proceedings will be published on Procedia CIRP (by Elsevier B.V.), which is indexed in the EI Compendex and Scopus databases
- Special Issues with selection of enhanced papers in: IJCM, other journals to be announced

Abbreviation	Topic
ML	Machine Learning
ONT	Ontologies & Knowledge Management
CPS	Cyber-Physical Systems
DT_IoT	Digital Twins, Internet of Things (IoT) & Simulation
PSM	Planning, Scheduling & Maintenance
PSS	Product-Service Systems (PSS)
BAT	Battery Manufacturing
ROB	Robotic and Assembly Systems
MPD	Manufacturing Processes & Design
SEN	Sensing, Process Monitoring & Control
ADD	Additive Manufacturing
SYS	Manufacturing Systems
MAN	Management
AR/VR/MR	Augmented, Virtual & Mixed Reality
EDU	Education & Teaching
ENG	Energy
LCE	Life-Cycle Engineering
MX	Mixed-Session



# CIRP CMS 2021 Preliminary Program

Wednesday 22/09/2021 – DAY 1 (Opening)							
08:30 – 09:00 CET	Opening Ceremony						
09:00 – 09:40	Keynote Talk 1						
09:40 – 11:20	Parallel Sessions						
		<b>S1.1 – SYS</b>	<b>S2.1 – DT_IOT</b>	<b>S3.1 – ML</b>	<b>S4.1 – MPD</b>	<b>S5.1 – ADD</b>	<b>S6.1 – MAN</b>
	09:40 – 10:00	PROCIR-D-20-00431	PROCIR-D-20-00388	PROCIR-D-20-00397	PROCIR-D-20-00395	PROCIR-D-20-00412	PROCIR-D-20-00386
	10:00 – 10:20	PROCIR-D-20-00503	PROCIR-D-20-00405	PROCIR-D-20-00411	PROCIR-D-20-00699	PROCIR-D-20-00454	PROCIR-D-20-00393
	10:20 – 10:40	PROCIR-D-20-00993	PROCIR-D-20-00440	PROCIR-D-20-00464	PROCIR-D-20-00722	PROCIR-D-20-00482	PROCIR-D-20-00423
	10:40 – 11:00	PROCIR-D-20-00590	PROCIR-D-20-00457	PROCIR-D-20-00470	PROCIR-D-20-00478	PROCIR-D-20-00493	PROCIR-D-20-00436
11:00 – 11:20	PROCIR-D-20-00645	PROCIR-D-20-00460	PROCIR-D-20-00484	PROCIR-D-20-00569	PROCIR-D-20-00496	PROCIR-D-20-00443	
11:20 – 11:30	Coffee Break						
11:30 – 13:10	Parallel Sessions						
		<b>S1.2 – SYS</b>	<b>S2.2 – DT_IOT</b>	<b>S3.2 – ML</b>	<b>S4.2 – MPD</b>	<b>S5.2 – ADD</b>	<b>S6.2 – MAN</b>
	11:30 – 11:50	PROCIR-D-20-00656	PROCIR-D-20-00469	PROCIR-D-20-00485	PROCIR-D-20-00555	PROCIR-D-20-00520	PROCIR-D-20-00445
	11:50 – 12:10	PROCIR-D-20-00687	PROCIR-D-20-00486	PROCIR-D-20-00492	PROCIR-D-20-00570	PROCIR-D-20-00536	PROCIR-D-20-00452
	12:10 – 12:30	PROCIR-D-20-00744	PROCIR-D-20-00525	PROCIR-D-20-00504	PROCIR-D-20-00601	PROCIR-D-20-00561	PROCIR-D-20-00501
	12:30 – 12:50	PROCIR-D-20-00764	PROCIR-D-20-00546	PROCIR-D-20-00545	PROCIR-D-20-01180	PROCIR-D-20-00579	PROCIR-D-20-00538
12:50 – 13:10	PROCIR-D-20-00975	PROCIR-D-20-00567	PROCIR-D-20-00597	PROCIR-D-20-00952	PROCIR-D-20-00591	PROCIR-D-20-00662	
13:10 – 13:40	Lunch Break						
13:40 – 15:20	Parallel Sessions						
		<b>S1.3 – SYS</b>	<b>S2.3 – DT_IOT</b>	<b>S3.3 – ML</b>	<b>S4.3 – MPD</b>	<b>S5.3 – ADD</b>	<b>S6.3 – MAN</b>
	13:40 – 14:00	PROCIR-D-20-00539	PROCIR-D-20-00568	PROCIR-D-20-00599	PROCIR-D-20-00684	PROCIR-D-20-00610	PROCIR-D-20-00564
	14:00 – 14:20	PROCIR-D-20-01178	PROCIR-D-20-00574	PROCIR-D-20-00602	PROCIR-D-20-00737	PROCIR-D-20-00616	PROCIR-D-20-00670
	14:20 – 14:40	PROCIR-D-21-00012	PROCIR-D-20-00596	PROCIR-D-20-00603	PROCIR-D-20-00489	PROCIR-D-20-00702	PROCIR-D-20-00762
	14:40 – 15:00	PROCIR-D-21-00018	PROCIR-D-20-00598	PROCIR-D-20-00604	PROCIR-D-20-00407	PROCIR-D-20-00723	PROCIR-D-20-00983
15:00 – 15:20	PROCIR-D-20-00516	PROCIR-D-20-00615	PROCIR-D-20-00622	PROCIR-D-20-01007	PROCIR-D-20-00416	PROCIR-D-21-00016	
15:20 – 15:30	Coffee Break						
15:30 – 17:10	Parallel Sessions						
		<b>S1.4 – SYS</b>	<b>S2.4 – DT_IOT</b>	<b>S3.4 – ML</b>	<b>S4.4 – AR/VR/MR</b>	<b>S5.4 – ADD</b>	<b>S6.4 – MAN</b>
	15:30 – 15:50	PROCIR-D-20-00474	PROCIR-D-20-00627	PROCIR-D-20-00632	PROCIR-D-20-00552	PROCIR-D-20-00727	PROCIR-D-20-00668
	15:50 – 16:10	PROCIR-D-20-00694	PROCIR-D-20-00641	PROCIR-D-20-00648	PROCIR-D-20-00401	PROCIR-D-20-00954	PROCIR-D-20-00752
	16:10 – 16:30	PROCIR-D-20-00966	PROCIR-D-20-00665	PROCIR-D-20-00649	PROCIR-D-20-00414	PROCIR-D-20-00995	PROCIR-D-21-00225
	16:30 – 16:50	PROCIR-D-20-00417	PROCIR-D-20-00677	PROCIR-D-20-00664	PROCIR-D-20-00475	PROCIR-D-20-01165	PROCIR-D-20-00565
16:50 – 17:10	PROCIR-D-20-00957	PROCIR-D-20-00685	PROCIR-D-20-00692	PROCIR-D-20-00499	PROCIR-D-20-00666		

CIRP CMS 2021 Preliminary Program

Thursday 23/09/2021 – DAY 2							
08:30 – 09:10 CET	Keynote Talk 2						
09:10 – 10:50	Parallel Sessions						
		S1.5 – SYS	S2.5 – DT_IOT	S3.5 – ML	S4.5 – AR/VR/MR	S5.5 – ROB	S6.5 – ENG
	09:10 – 09:30	PROCIR-D-20-00625	PROCIR-D-20-00672	PROCIR-D-20-00697	PROCIR-D-20-00522	PROCIR-D-20-00389	PROCIR-D-20-00424
	09:30 – 09:50	PROCIR-D-20-00637	PROCIR-D-20-00707	PROCIR-D-20-00714	PROCIR-D-20-00400	PROCIR-D-20-00394	PROCIR-D-20-00439
	09:50 – 10:10	PROCIR-D-20-00450	PROCIR-D-20-01179	PROCIR-D-20-00719	PROCIR-D-20-00650	PROCIR-D-20-00435	PROCIR-D-20-00441
	10:10 – 10:30	PROCIR-D-20-00459	PROCIR-D-20-00757	PROCIR-D-20-00726	PROCIR-D-20-00660	PROCIR-D-20-00455	PROCIR-D-20-00453
10:30 – 10:50	PROCIR-D-20-00461	PROCIR-D-20-00963	PROCIR-D-20-00729	PROCIR-D-20-00673	PROCIR-D-20-00607	PROCIR-D-20-00490	
10:50 – 11:00	Coffee Break						
11:00 – 12:40	Parallel Sessions						
		S1.6 – SYS	S2.6 – DT_IOT	S3.6 – ML	S4.6 – AR/VR/MR	S5.6 – ROB	S6.6 – ENG
	11:00 – 11:20	PROCIR-D-20-00446	PROCIR-D-20-00985	PROCIR-D-20-00738	PROCIR-D-20-00713	PROCIR-D-20-00494	PROCIR-D-20-00630
	11:20 – 11:40	PROCIR-D-20-00705	PROCIR-D-21-00009	PROCIR-D-20-00743	PROCIR-D-20-00715	PROCIR-D-20-00589	PROCIR-D-20-00647
	11:40 – 12:00	PROCIR-D-20-00418	PROCIR-D-21-00014	PROCIR-D-20-00754	PROCIR-D-20-00971	PROCIR-D-20-00595	PROCIR-D-20-00717
	12:00 – 12:20	PROCIR-D-20-00488	PROCIR-D-20-00495	PROCIR-D-20-00756	PROCIR-D-20-00487	PROCIR-D-20-00611	PROCIR-D-20-00748
12:20 – 12:40	PROCIR-D-20-00594	PROCIR-D-20-00577	PROCIR-D-20-00991	PROCIR-D-20-00953	PROCIR-D-20-00653	PROCIR-D-20-00766	
12:40 – 13:10	Lunch Break						
13:10 – 14:50	Parallel Sessions						
		S1.7 – SYS	S2.7 – DT_IOT	S3.7 – ML	S4.7 – BAT	S5.7 – ROB	S6.7 – ONT
	13:10 – 13:30	PROCIR-D-20-00736	PROCIR-D-20-00658	PROCIR-D-20-00949	PROCIR-D-20-00398	PROCIR-D-20-00732	PROCIR-D-20-00698
	13:30 – 13:50	PROCIR-D-20-01183	PROCIR-D-20-00728	PROCIR-D-20-00996	PROCIR-D-20-01184	PROCIR-D-20-00746	PROCIR-D-20-01186
	13:50 – 14:10	PROCIR-D-20-01012	PROCIR-D-20-01170	PROCIR-D-20-01004	PROCIR-D-20-00562	PROCIR-D-20-00749	PROCIR-D-20-00432
	14:10 – 14:30	PROCIR-D-20-00984	PROCIR-D-20-00449	PROCIR-D-20-01017	PROCIR-D-20-00688	PROCIR-D-20-00981	PROCIR-D-20-00502
14:30 – 14:50	PROCIR-D-20-00976	PROCIR-D-20-00458	PROCIR-D-21-00010	PROCIR-D-20-00638	PROCIR-D-20-00997	PROCIR-D-20-00964	
14:50 – 15:00	Coffee Break						
15:00 – 16:40	Parallel Sessions						
		S1.8 – SYS	S2.8 – DT_IOT	S3.8 – ML	S4.8 – BAT	S5.8 – EDU	S6.8 – ONT
	15:00 – 15:20	PROCIR-D-20-00671	PROCIR-D-20-00498	PROCIR-D-20-00447	PROCIR-D-20-00640	PROCIR-D-20-00533	PROCIR-D-20-00680
	15:20 – 15:40	PROCIR-D-20-00456	PROCIR-D-20-00661	PROCIR-D-20-00491	PROCIR-D-20-00663	PROCIR-D-20-00634	PROCIR-D-20-00711
	15:40 – 16:00	PROCIR-D-20-00406	PROCIR-D-20-00691	PROCIR-D-20-00532	PROCIR-D-20-00675	PROCIR-D-20-00959	PROCIR-D-20-00511
	16:00 – 16:20	PROCIR-D-20-00483	PROCIR-D-20-00708	PROCIR-D-20-00676	PROCIR-D-20-00404	PROCIR-D-20-00968	PROCIR-D-20-00391
16:20 – 16:40	PROCIR-D-20-00580	PROCIR-D-20-00745	PROCIR-D-20-00693	PROCIR-D-20-00629	PROCIR-D-20-00992	PROCIR-D-20-00636	

# CIRP CMS 2021 Preliminary Program

Friday 24/09/2021 – DAY 3							
08:30 – 09:10 CET	Keynote Talk 3						
09:10 – 10:50	Parallel Sessions						
		<b>S1.9 – PSM</b>	<b>S2.9 – DT_IOT</b>	<b>S3.9 – ML</b>	<b>S4.9 – LCE</b>	<b>S5.9 - ML</b>	
	09:10 – 09:30	PROCIR-D-20-00628	PROCIR-D-20-00413	PROCIR-D-20-00642	PROCIR-D-20-00724	PROCIR-D-20-00683	
	09:30 – 09:50	PROCIR-D-20-00643	PROCIR-D-20-00479	PROCIR-D-20-00751	PROCIR-D-20-00960	PROCIR-D-20-00530	
	09:50 – 10:10	PROCIR-D-20-00471	PROCIR-D-20-00706	PROCIR-D-20-00763	PROCIR-D-20-00422	PROCIR-D-20-00587	
	10:10 – 10:30	PROCIR-D-20-00477	PROCIR-D-20-00408	PROCIR-D-20-00444	PROCIR-D-20-00526	PROCIR-D-20-01000	
10:30 – 10:50	PROCIR-D-20-00473	PROCIR-D-20-00740	PROCIR-D-20-01016	PROCIR-D-20-00433	PROCIR-D-20-00967		
10:50 – 11:00	Coffee Break						
11:00 – 12:40	Parallel Sessions						
		<b>S1.10 – PSM</b>	<b>S2.10 – CPS</b>	<b>S3.10 – ML</b>	<b>S4.10 – PSS</b>	<b>S5.10 - MX</b>	
	11:00 – 11:20	PROCIR-D-20-00472	PROCIR-D-20-00462	PROCIR-D-20-01019	PROCIR-D-20-00451	PROCIR-D-20-00528	
	11:20 – 11:40	PROCIR-D-20-00644	PROCIR-D-20-00467	PROCIR-D-20-00700	PROCIR-D-20-00505	PROCIR-D-20-00600	
	11:40 – 12:00	PROCIR-D-20-00399	PROCIR-D-20-00557	PROCIR-D-20-00753	PROCIR-D-20-00507	PROCIR-D-20-00679	
	12:00 – 12:20	PROCIR-D-20-00521	PROCIR-D-20-00581	PROCIR-D-20-00758	PROCIR-D-20-00690	PROCIR-D-21-00007	
12:20 – 12:40	PROCIR-D-20-00551	PROCIR-D-20-00614	PROCIR-D-20-01181	PROCIR-D-20-00541	PROCIR-D-20-01185		
12:40 – 13:10	Lunch Break						
13:10 – 14:50	Parallel Sessions						
		<b>S1.11 – PSM</b>	<b>S2.11 – CPS</b>	<b>S3.11 – ML</b>	<b>S4.11 – SEN</b>	<b>S5.11 - MX</b>	
	13:10 – 13:30	PROCIR-D-20-00585	PROCIR-D-20-00617	PROCIR-D-20-00606	PROCIR-D-21-00015	PROCIR-D-20-01013	
	13:30 – 13:50	PROCIR-D-20-00593	PROCIR-D-20-00701	PROCIR-D-20-00608	PROCIR-D-20-00631	PROCIR-D-20-01182	
	13:50 – 14:10	PROCIR-D-20-00626	PROCIR-D-20-00747	PROCIR-D-20-00624	PROCIR-D-20-00678	PROCIR-D-20-00962	
	14:10 – 14:30	PROCIR-D-20-00514	PROCIR-D-20-00761	PROCIR-D-20-00403	PROCIR-D-20-00965	PROCIR-D-20-00621	
14:30 – 14:50	PROCIR-D-20-00402	PROCIR-D-20-01169	PROCIR-D-20-00681	PROCIR-D-20-00419			
14:50 – 15:00	Coffee Break						
15:00 – 16:40	Parallel Sessions						
		<b>S1.12 – PSM</b>	<b>S2.12 – CPS</b>	<b>S3.12 – ML</b>	<b>S4.12 – SEN</b>		
	15:00 – 15:20	PROCIR-D-20-00481	PROCIR-D-20-01177	PROCIR-D-20-00497	PROCIR-D-20-00506		
	15:20 – 15:40	PROCIR-D-20-00667	PROCIR-D-21-00017	PROCIR-D-20-00550	PROCIR-D-20-00554		
	15:40 – 16:00	PROCIR-D-20-00970	PROCIR-D-20-00442	PROCIR-D-21-00011	PROCIR-D-20-00540		
	16:00 – 16:20	PROCIR-D-21-00019	PROCIR-D-20-00548	PROCIR-D-20-00721	PROCIR-D-20-00392		
16:20 – 16:40	PROCIR-D-20-00704	PROCIR-D-20-01011	PROCIR-D-20-01014				
16:40 – 17:40	Best Paper Award						
	Round up						
	CIRP CMS 2022 Announcement						