

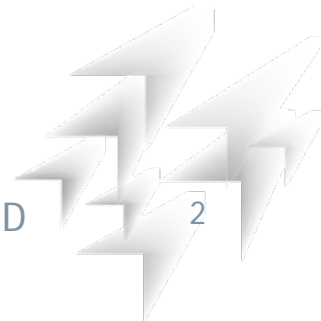
TAKING
COOPERATION
FORWARD

 28 April 2017






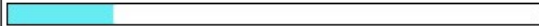
 **Survey - importance of selected topics in the field of advanced manufacturing**

 Business Upper Austria




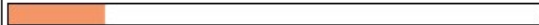


1. How relevant will the following topics in the field of "Robotics" be for your company in future?	Mean (1 not important - 6 very important)
Autonomous mobile systems, e.g. selflearning robots, cloud robotics	3.56
Attachments to robots (grippers) and shaping of robots for special applications in e.g. biotechnology, quality inspection	3.65
Service inserts and work areas, e.g. robots for maintainance, cleaning, ...	3.26
Collaborative robots, for e.g. human - robot collaborative production	3.78

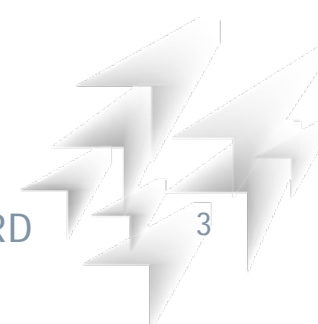


- Autonomous mobile systems, e.g. selflearning robots, cloud robotics


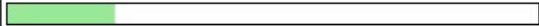



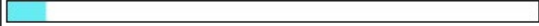
		Answer Percent	Answer Total
1 - not important		19.56%	53
2 - less important		13.28%	36
3 - slightly important		16.61%	45
4 - moderate important		12.55%	34
5 - important		18.08%	49
6 - very important		19.93%	54
		Mean	3.56



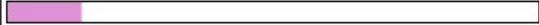



- Attachments to robots (grippers) and shaping of robots for special applications in e.g. biotechnology, quality inspection, ...

		Answer Percent	Answer Total
1 - not important		13.28%	36
2 - less important		14.76%	40
3 - slightly important		16.61%	45
4 - moderate important		18.08%	49
5 - important		23.62%	64
6 - very important		13.65%	37
		Mean	3.65



ROBOTICS

- Service inserts and work areas, e.g. robots for maintenance, cleaning, ...			
		Answer Percent	Answer Total
1 - not important		15.13%	41
2 - less important		20.3%	55
3 - slightly important		20.66%	56
4 - moderate important		18.82%	51
5 - important		17.71%	48
6 - very important		7.38%	20
		Mean	3.26





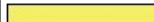

- Collaborative robots, for e.g. human - robot collaborative production			
		Answer Percent	Answer Total
1 - not important		13.65%	37
2 - less important		15.87%	43
3 - slightly important		14.02%	38
4 - moderate important		12.18%	33
5 - important		23.99%	65
6 - very important		20.3%	55
		Mean	3.78





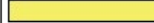



ELECTRONICS FOR PRODUCTION

2. How relevant will the following topics in the field of "Electronics for Production" be for your company in future?	Mean (1 not important - 6 very important)
Electronics for internal processes, systems and sensor systems	4.38
Intelligent and logic systems, e.g. control units	4.45
Data transmission, e.g. WLAN	4.17
Energy optimization in electronics, e.g. reduction of power consumption	4.01

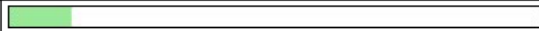


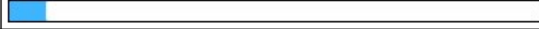
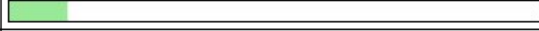
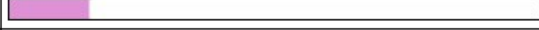


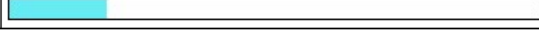
- Electronics for internal processes, systems and sensor systems			
		Answer Percent	Answer Total
1 - not important		7.01%	19
2 - less important		7.01%	19
3 - slightly important		10.7%	29
4 - moderate important		18.08%	49
5 - important		30.26%	82
6 - very important		26.94%	73
		Mean	4.38

- Intelligent and logic systems, e.g. control units			
		Answer Percent	Answer Total
1 - not important		5.54%	15
2 - less important		5.54%	15
3 - slightly important		11.07%	30
4 - moderate important		19.93%	54
5 - important		31.73%	86
6 - very important		26.2%	71
		Mean	4.45



ELECTRONICS FOR PRODUCTION

- Data transmission, e.g. WLAN			Answer Percent	Answer Total
1 - not important			7.38%	20
2 - less important			11.81%	32
3 - slightly important			11.44%	31
4 - moderate important			17.71%	48
5 - important			28.78%	78
6 - very important			22.88%	62
			Mean	4.17

- Energy optimization in electronics, e.g. reduction of power consumption			Answer Percent	Answer Total
1 - not important			7.01%	19
2 - less important			11.07%	30
3 - slightly important			15.13%	41
4 - moderate important			26.2%	71
5 - important			22.14%	60
6 - very important			18.45%	50
			Mean	4.01

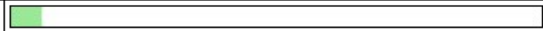


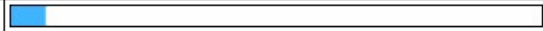
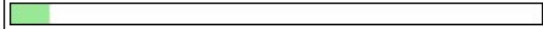
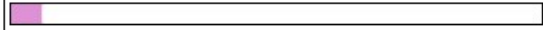
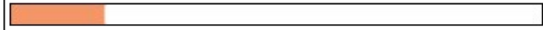
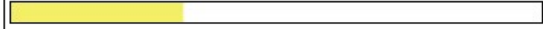
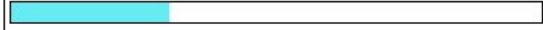
PRODUCTION PROCESSES

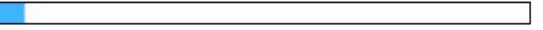
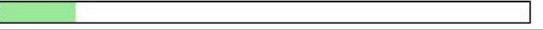

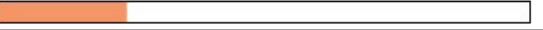

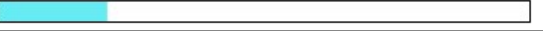
3. How relevant will the following topics in the field of "Production Processes" be for your company in future?	Mean (1 not important - 6 very important)
Optimization of production processes	4.80
Service, e.g. predictive maintenance, reconfigurable production systems, ...	4.52
Additive manufacturing, e.g. 3D printing	4.03

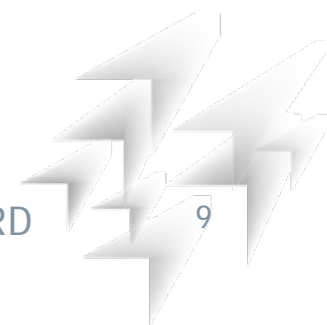


PRODUCTION PROCESSES

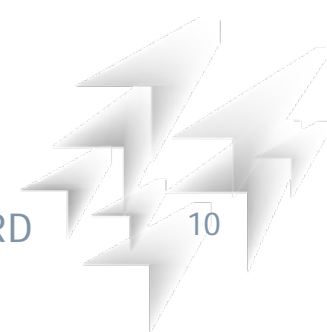
- Optimization of production processes			Answer Percent	Answer Total
1 - not important			5.17%	14
2 - less important			5.9%	16
3 - slightly important			7.38%	20
4 - moderate important			9.96%	27
5 - important			28.41%	77
6 - very important			43.17%	117
Mean				4.8


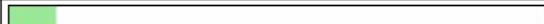
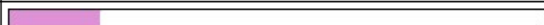



			Answer Percent	Answer Total
1 - not important			6.64%	18
2 - less important			7.38%	20
3 - slightly important			5.9%	16
4 - moderate important			17.71%	48
5 - important			32.47%	88
6 - very important			29.89%	81
Mean				4.52




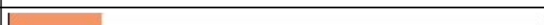

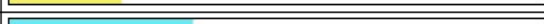
- Additive manufacturing, e.g. 3D printing			Answer Percent	Answer Total
1 - not important			5.17%	14
2 - less important			14.76%	40
3 - slightly important			14.39%	39
4 - moderate important			24.35%	66
5 - important			20.66%	56
6 - very important			20.66%	56
Mean				4.03


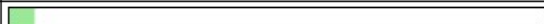






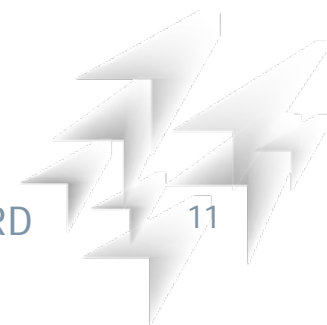
4. How relevant will the following topics in the field of "ICT Information and communication technology" be for your company in future?	Mean (1 not important - 6 very important)
Data analysis, e.g. big data analytics, artificial intelligence	4.30
Data security, e.g. in cloud computing, open platforms, ...	4.42
Software Tools, e.g. CAD, CAM, control systems for various hardware	4.43



- Data analysis, e.g. big data analytics, artificial intelligence			
		Answer Percent	Answer Total
1 - not important		6.27%	17
2 - less important		8.86%	24
3 - slightly important		16.97%	46
4 - moderate important		12.92%	35
5 - important		26.94%	73
6 - very important		28.04%	76
		Mean	4.3

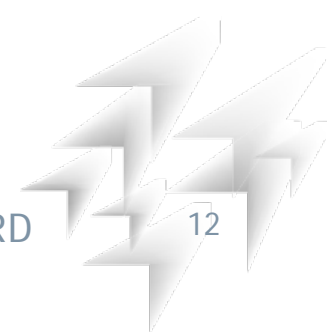
- Data security, e.g. in cloud computing, open platforms, ...			
		Answer Percent	Answer Total
1 - not important		5.54%	15
2 - less important		9.59%	26
3 - slightly important		12.18%	33
4 - moderate important		17.34%	47
5 - important		21.03%	57
6 - very important		34.32%	93
		Mean	4.42

- Software Tools, e.g. CAD, CAM, control systems for various hardware			
		Answer Percent	Answer Total
1 - not important		4.43%	12
2 - less important		4.8%	13
3 - slightly important		12.92%	35
4 - moderate important		23.62%	64
5 - important		29.89%	81
6 - very important		24.35%	66
		Mean	4.43



MODELING AND SIMULATION

5. How relevant will the following topics in the field of "Modeling and Simulation" be for your company in future?	Mean (1 not important - 6 very important)
Visualization, augmented reality	4.12
Models for monitoring and maintainance	4.22
Simulation software for e.g. mult-parameter simulation of technological processes	4.42
Process optimization based on process simulation	4.28
Virtual commissioning, e.g. hardware-in-the-loop (HIL)	3.76

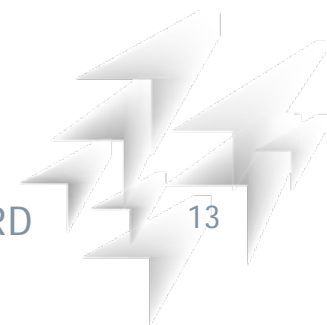



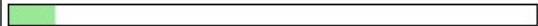

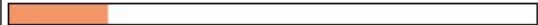
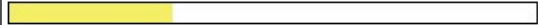
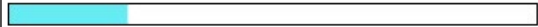
MODELING AND SIMULATION






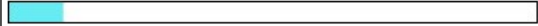
- Visualization, augmented reality			Answer Percent	Answer Total
1 - not important			4.06%	11
2 - less important			11.81%	32
3 - slightly important			14.39%	39
4 - moderate important			25.83%	70
5 - important			25.83%	70
6 - very important			18.08%	49
Mean				4.12

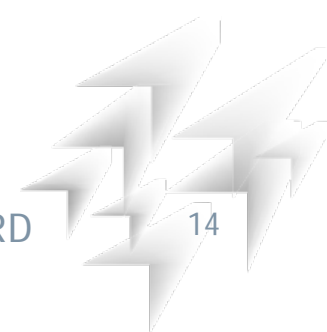
- Models for monitoring and maintainance			Answer Percent	Answer Total
1 - not important			3.69%	10
2 - less important			9.96%	27
3 - slightly important			13.28%	36
4 - moderate important			24.35%	66
5 - important			31.37%	85
6 - very important			17.34%	47
Mean				4.22

- Simulation software for e.g. mult-parameter simulation of technological processes			Answer Percent	Answer Total
1 - not important			5.17%	14
2 - less important			7.01%	19
3 - slightly important			9.96%	27
4 - moderate important			21.4%	58
5 - important			31%	84
6 - very important			25.46%	69
Mean				4.42



- Process optimization based on process simulation			
		Answer Percent	Answer Total
1 - not important		5.54%	15
2 - less important		8.86%	24
3 - slightly important		13.28%	36
4 - moderate important		18.82%	51
5 - important		31%	84
6 - very important		22.51%	61
		Mean	4.28

- Virtual commissioning, e.g. hardware-in-the-loop (HIL)			
		Answer Percent	Answer Total
1 - not important		8.49%	23
2 - less important		11.81%	32
3 - slightly important		22.51%	61
4 - moderate important		19.56%	53
5 - important		27.31%	74
6 - very important		10.33%	28
		Mean	3.76





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