Contents

Fore	eword			V
1	Appl	ication	Concept – Horizontal and Vertical Integration	1
	1.1	Benefi	ts of MES	1
	1.2	Level	Structure in Manufacturing Companies	4
	1.3	Horizo	ontal and Vertical Integration	8
	1.4	Work (Organization and Structures with MES	10
	1.5	HYDR	A Module Structure	12
2	The	HYDRA	Concept	17
	2.1	Specia	l Conditions in Manufacturing	18
	2.2	HYDR	A IT Architecture	19
2.3 HYDRA System Structure		A System Structure	21	
		2.3.1	System integration services	22
		2.3.2	MES Application Services	25
		2.3.3	MES Operation Center (MOC)	26
		2.3.4	Smart MES Application (SMA)	30
		2.3.5	Enterprise Integration Services	31
		2.3.6	Shopfloor Connectivity Services	32
		2.3.7	Acquisition and Information Panel (AIP)	34
		2.3.8	Alternative data collection functions	35
	2.4	The Ci	ustomized MES	37

3	HYDI	RA for F	Production Management	39
	3.1	Shop F	Floor Data Collection (BDE)	39
		3.1.1	Data collection and information	40
		3.1.2	Monitoring functions for orders and operations	42
		3.1.3 C	Controlling functions	46
		3.1.4	Functions for production control	57
		3.1.5	HYDRA BDE in overview	59
	3.2	Machin	ne Data Collection (MDE)	61
		3.2.1	Configuring machines and workplaces	62
		3.2.2	Monitoring machine data	64
		3.2.3	Controlling: machine data	67
		3.2.4	HYDRA MDE in overview	79
	3.3	HYDR	A Shop Floor Scheduling (HLS)	81
		3.3.1	The planning board as a central element	82
		3.3.2	Individual configuration of shop floor scheduling	83
		3.3.3	Detailed planning and assignment functions	85
		3.3.4	Optimization	87
		3.3.5	Simulation	88
		3.3.6	Planning information	89
		3.3.7	Evaluation of capacity utilization	91
		3.3.8	HYDRA Shop Floor Scheduling in overview	92
	3.4	Materi	al and Production Logistics (MPL)	94
		3.4.1	Material and stock monitoring	94
		3.4.2	Stock overviews and expiry statistics	96
		3.4.3	HYDRA MPL in overview	100

3.5	Tracking and Tracing (TRT)				
	3.5.1	Batch data collection			
	3.5.2	Functions for batch tracing			
	3.5.3	Product documentation			
	3.5.4	HYDRA TRT in overview			
3.6	Proces	ss Data Processing (PDV)			
	3.6.1	Management of master data			
	3.6.2	On-line visualization of process data			
	3.6.3	Analyses and evaluations			
	3.6.4	HYDRA PDV in overview			
3.7	Tool a	nd Resource Management (WRM)			
	3.7.1	Management of master data			
	3.7.2	Current information about tools and resources			
	3.7.3	Analyses, reports and archiving			
	3.7.4	Planning functions			
	3.7.5	HYDRA WRM in overview			
3.8	Setting	g Data and DNC			
	3.8.1	Typical DNC workflow			
	3.8.3	Monitoring NC programs			
	Comparison editor				
	3.8.4	Downloading / uploading NC programs			
	3.8.5	HYDRA DNC in overview			
3.9	Energy	y Management (EMG)			
	3.9.1	The growing importance of energy management 134			
	3.9.2	Energy management with MES HYDRA			

		3.9.3	Energy data collection
		3.9.4	Master data management
		3.9.5	Monitoring energy data
		3.9.6	Analyses of energy consumption
		3.9.7	HYDRA EMG in overview
4	HYD	RA for I	Human Resources Management
	4.1	Genera	al overview
	4.2	Time a	and Attendance (PZE)
		4.2.1	Master data management
		4.2.2	Recording personnel times and attendances 146
		4.2.3	Overviews, maintenance functions and personnel
			information
		4.2.4	HYDRA PZE in overview
	4.3	Person	nnel Time Management (PZW)
		4.3.1	Evaluation of labor time data
		4.3.2	Planning working hours and absences
		4.3.3	Workflow for absences
		4.3.4	Data maintenance and analyses
		4.3.5	Labor and wage type statistics
		Wage t	type statistics
		4.3.6	HYDRA PZW in overview
	4.4	Person	anel Scheduling (PEP)
		4.4.1	Management functions for personnel scheduling 167
		4.4.2	Determining workforce requirements and personnel
			assignments

		4.4.3	Analyses for personnel scheduling
		4.4.4	HYDRA PEP in overview
	4.5	Incenti	ve Wage (LLE)
		4.5.1	Master data management
		4.5.2	Calculation and analysis functions 175
		4.5.3	Data maintenance, overviews and analyses 178
		4.5.4	Bonus group evaluations
		4.5.5	HYDRA LLE in overview
	4.6	Access	Control System (ZKS)
		4.6.1	Management functions
		4.6.2	Current overviews and information
		4.6.3	Access control analyses
		4.6.4	Special access control functions
		4.6.5	HYDRA ZKS in overview
5	HYDI	RA for C	Quality Assurance
	5.1	Genera	ıl Overview
	5.2	Overar	ching Functions
	5.3	In-Prod	duction Inspection (FEP)
		5.3.1	Inspection planning for in-production inspection 201
		5.3.2	Inspection data collection
		5.3.3	Evaluation of inspection results
		5.3.4	Outgoing goods inspection
		5.3.5	Initial sample inspection
		5.3.6	HYDRA FEP in overview
	5.4	Incomi	ng Goods Inspection (WEP)

		5.4.1	Incoming goods inspection planning 21	13
		5.4.2	Evaluations	13
		5.4.3	HYDRA WEP in overview	15
	5.5	Compla	nint Management (REK)	6
		5.5.1	Master data	6
		5.5.2	Data collection and action management 21	16
		5.5.3	Monitoring and analyses	17
		5.5.4	Reports and forms	9
		5.5.5	HYDRA REK in overview	21
	5.6	Test Eq	uipment Management (PMV)	22
		5.6.1	Master data management	22
		5.6.2	Inspection planning and calibration	22
		5.6.3	Data evaluation and calibration planning	23
		5.6.4	HYDRA PMV in overview	25
6	Gloss	ary	22	26
Biblio	graph	y	23	35
List of authors				36



http://www.springer.com/978-3-662-54982-7

MES Compendium Perfect MES Solutions based on HYDRA

Kletti, J.; Deisenroth, R.

2018, XII, 237 p. 234 illus. in color., Hardcover

ISBN: 978-3-662-54982-7