

Industrial Ethernet Market with Recession Impact Analysis by Offering (Hardware, Software, Services), Protocol (PROFINET, EtherNet/IP), End-use Industry (Automotive & Transportation, Electrical & Electronics) and Region- Global Forecast to 2028

Market Report | 2023-01-17 | 204 pages | MarketsandMarkets

## **AVAILABLE LICENSES:**

- Single User \$4950.00
- Multi User \$6650.00
- Corporate License \$8150.00
- Enterprise Site License \$10000.00

# Report description:

The industrial ethernet market is projected to grow from USD 11.0 billion in 2023 to USD 15.8 billion by 2028; it is expected to register a CAGR of 7.5% during the forecast period.

Services in offering segment to register the highest CAGR of industrial ethernet market during the forecast period Service providers provide customized network design and other related services, such as long-term maintenance contracts of installations, to cater to clients with specific requirements. They also provide remote support services for networks and can solve or manage network problems remotely. Companies such as Siemens AG (Germany) and General Electric (US) provide a separate services portfolio for this market.

"POWERLINK to grow with significant CAGR during the forecast period."

Ethernet POWERLINK is a real-time protocol for standard Ethernet. POWERLINK was initially developed by B&R (Austria). Ethernet POWERLINK is implemented on top of IEEE 802.3 and, therefore, allows a free selection of network topology and to cross-connect between different topologies. It uses a polling and time-slicing mechanism for real-time data exchange. A POWERLINK master or managed node controls the time synchronization through packet jitter in the range of tens of nanoseconds. Such a system is suitable for all kinds of automation systems ranging from PLC-to-PLC communication and visualization down to motion and I/O control. Barriers to implementing POWERLINK are quite low due to the availability of open-source stack software. In addition, CANopen is part of the standard that allows for easy system upgrades from previous Fieldbus protocols.

Siemens (Germany), Rockwell Automation (US), Cisco Systems (US), Belden (US), Omron (Japan), Moxa (Taiwan), Huawei Technologies (Sweden), SICK (Germany), Schneider Electric (France), and ABB (Switzerland) are the key players in the industrial ethernet market. These top players have strong portfolios of products and services and presence in both mature and emerging

markets.

## Research Coverage

The report defines, describes, and forecasts the industrial ethernet market based on offering, protocol, end-use vertical, and geography. It provides detailed information regarding factors such as drivers, restraints, opportunities, and challenges influencing the growth of the industrial ethernet market. It also analyzes competitive developments such as product launches, acquisitions, expansions, contracts, partnerships, and developments carried out by the key players to grow in the market.

Reasons to Buy this Report

The report will help leaders/new entrants in the industrial ethernet market in the following ways:

- 1. The report comprehensively segments the industrial ethernet market and provides the closest market size estimation for all subsegments across regions.
- 2. The report will help stakeholders understand the pulse of the market and provide them with information on key drivers, restraints, challenges, and opportunities pertaining to the industrial ethernet market.
- 3. The report will help stakeholders understand their competitors better and gain insights to improve their position in the industrial ethernet market. The competitive landscape section describes the competitor ecosystem.

# **Table of Contents:**

1 INTRODUCTION 20

- 1.1 STUDY OBJECTIVES 20
- 1.2□MARKET DEFINITION□20
- 1.3 INCLUSIONS AND EXCLUSIONS 21
- 1.4 STUDY SCOPE 21
- 1.4.1 MARKETS COVERED 21

FIGURE 1□INDUSTRIAL ETHERNET MARKET SEGMENTATION□21

- 1.4.2 REGIONAL SCOPE 22
- 1.4.3 YEARS CONSIDERED 22
- 1.5 CURRENCY CONSIDERED 22
- 1.6□LIMITATIONS□23
- 1.7 STAKEHOLDERS 23
- 1.8 □ SUMMARY OF CHANGES □ 23
- 2 RESEARCH METHODOLOGY 24
- 2.1 RESEARCH DATA 24

FIGURE 2 PROCESS FLOW: INDUSTRIAL ETHERNET MARKET SIZE ESTIMATION 24

FIGURE 3 INDUSTRIAL ETHERNET MARKET: RESEARCH DESIGN 25

- 2.1.1 SECONDARY AND PRIMARY RESEARCH 26
- 2.1.2 SECONDARY DATA 26
- 2.1.2.1 Secondary sources 27
- 2.1.2.2 List of key secondary sources 27
- 2.1.3 PRIMARY DATA 27
- 2.1.3.1 Primary sources 28
- 2.1.3.2 Key industry insights 28
- 2.1.3.3 Primary interviews with experts 29
- 2.1.3.4 List of key primary respondents 29
- 2.1.3.5 Breakdown of primaries 29
- 2.2 MARKET SIZE ESTIMATION 30
- 2.2.1 BOTTOM-UP APPROACH 30
- 2.2.1.1 Demand-side analysis 30

Scotts International, EU Vat number: PL 6772247784

FIGURE 4 | INDUSTRIAL ETHERNET MARKET: BOTTOM-UP APPROACH | 30

2.2.2 TOP-DOWN APPROACH 31

2.2.2.1 Approach for deriving market size by top-down analysis 31

FIGURE 5∏INDUSTRIAL ETHERNET MARKET: TOP-DOWN APPROACH∏31

2.3 MARKET BREAKDOWN AND DATA TRIANGULATION 32

FIGURE 6 DATA TRIANGULATION 32

2.4 RESEARCH ASSUMPTIONS 33

2.5∏RISK ASSESSMENT∏33

TABLE 1 | ANALYSIS OF RISK FACTORS | 33

3 EXECUTIVE SUMMARY 34

3.1 | INDUSTRIAL ETHERNET MARKET: RECESSION IMPACT | 35

FIGURE 7∏RECESSION IMPACT: GDP GROWTH PROJECTION TILL 2023 FOR MAJOR ECONOMIES∏35

FIGURE 8⊓RECESSION IMPACT ON INDUSTRIAL ETHERNET MARKET, 2018-2028 (USD MILLION)∏36

FIGURE 9∏BY OFFERING, HARDWARE SEGMENT TO HOLD SECOND-LARGEST MARKET SHARE FROM 2023 TO 2028∏36

FIGURE 10∏BY PROTOCOL, ETHERNET/IP SEGMENT TO LEAD MARKET FROM 2023 TO 2028∏37

FIGURE 11⊓BY END-USE INDUSTRY, WATER & WASTEWATER SEGMENT TO REGISTER HIGHEST CAGR DURING FORECAST PERIOD∏38

FIGURE 12 ASIA PACIFIC ACCOUNTED FOR LARGEST MARKET SHARE IN 2022 39

4□PREMIUM INSIGHTS□40

4.1 ATTRACTIVE GROWTH OPPORTUNITIES FOR PLAYERS IN INDUSTRIAL ETHERNET MARKET 40

FIGURE 13□GROWING NEED FOR SCALABLE, FAST, RELIABLE, AND INTEROPERABLE COMMUNICATION PROTOCOLS TO BOOST MARKET GROWTH□40

4.2□INDUSTRIAL ETHERNET MARKET, BY OFFERING□41

FIGURE 14 SERVICES SEGMENT TO REGISTER HIGHEST CAGE FROM 2023 TO 2028 41

4.3□INDUSTRIAL ETHERNET MARKET, BY PROTOCOL□41

FIGURE 15 ETHERNET/IP PROTOCOL SEGMENT TO LEAD MARKET FROM 2023 TO 2028 41

4.4 INDUSTRIAL ETHERNET MARKET, BY END-USE INDUSTRY 42

FIGURE 16 TELECTRICAL & ELECTRONICS SEGMENT TO ACCOUNT FOR LARGEST MARKET SHARE BY 2028 142

4.5 REGIONAL SNAPSHOT OF INDUSTRIAL ETHERNET MARKET 43

FIGURE 17 INDUSTRIAL ETHERNET MARKET IN CHINA TO REGISTER HIGHEST CAGR FROM 2023 TO 2028 143

5 MARKET OVERVIEW 44

5.1 INTRODUCTION 44

5.2 MARKET DYNAMICS 144

FIGURE 18∏DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES FOR INDUSTRIAL ETHERNET MARKET∏44

5.2.1 DRIVERS 45

5.2.1.1 ☐ Growing need for scalable, fast, reliable, and interoperable communication protocols ☐ 45

5.2.1.2 Increasing initiatives by governments of developing countries to promote adoption of industrial automation 45

FIGURE 19 ANNUAL INSTALLATION OF INDUSTRIAL ROBOTS, BY CONTINENTS, 2021 (THOUSAND UNITS) 46

5.2.1.3 Growing popularity of smart automobiles 46

FIGURE 20 IMPACT ANALYSIS OF DRIVERS ON INDUSTRIAL ETHERNET MARKET 47

5.2.2∏RESTRAINTS∏47

5.2.2.1 Absence of standardization in industrial communication protocols and interfaces 47

FIGURE 21 IMPACT ANALYSIS OF RESTRAINTS ON INDUSTRIAL ETHERNET MARKET 48

5.2.3 OPPORTUNITIES 48

5.2.3.1 Emergence of 5G 48

FIGURE 22 IMPACT ANALYSIS OF OPPORTUNITIES ON INDUSTRIAL ETHERNET MARKET 148

 $5.2.4 \verb||CHALLENGES|| 49$ 

5.2.4.1 Cybersecurity threats 49

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

5.2.4.2 Harsh field site conditions-high-voltage transients, severe shocks and vibrations, and extremely high temperatures 49

FIGURE 23 IMPACT ANALYSIS OF CHALLENGES ON INDUSTRIAL ETHERNET MARKET 50

5.3 VALUE CHAIN ANALYSIS 50

FIGURE 24 VALUE CHAIN ANALYSIS OF INDUSTRIAL ETHERNET MARKET 50

- 5.4 KEY STAGES IN INDUSTRIAL ETHERNET VALUE CHAIN 51
- 5.4.1 ⊓RESEARCH AND DEVELOPMENT □ 51
- 5.4.2 COMPONENT MANUFACTURING 51
- 5.4.3 SYSTEM INTEGRATION 51
- 5.4.4 MARKETING AND SALES 51
- 5.4.5 POST-SALES SERVICES 51
- 5.5∏USE CASES ANALYSIS∏52
- 5.5.1∏EDGE SOLUTIONS OF ADVANTECH TO ENABLE REAL-TIME OIL TANKER MONITORING∏52
- 5.5.2∏PULP MOLDING EQUIPMENT MANUFACTURER IMPLEMENTED ROCKWELL AUTOMATION'S SOLUTIONS∏52
- 5.5.3 OSSID IMPROVES MACHINERY RELIABILITY AND PERFORMANCE USING MITSUBISHI ELECTRIC'S AUTOMATION PORTFOLIO 52
- 5.6 TARIFF REGULATORY BODIES 53
- 5.6.1 □ ETHERCAT TECHNOLOGY GROUP (ETG) □ 53
- 5.6.2 INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) 53
- 5.6.3∏IEEE∏53
- 5.6.4 INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO) 53
- 5.6.5 PROFIBUS USER ORGANIZATION (PNO) □53
- 5.6.6 | IEEE 802.3 CG | 53
- 5.6.6.1 10 BASE t1s 54
- 5.6.6.2 | 10base t1 | 155
- 5.6.7 ADVANTECH PROVIDED WISE-PAAS END-TO-CLOUD IOT TOTAL SOLUTION FOR REMOTE VIDEO SURVEILLANCE AND DEVICE STATUS MONITORING AND CONTROL FOR AUTOMOTIVE INSPECTION CENTER 56
- 5.6.8 OPTIMA CONTROL SOLUTIONS (UK) AND ROCKWELL AUTOMATION (US) PROVIDED AUTOMATED MONITORING SOLUTION TO BISCUIT MANUFACTURER 56
- 5.6.9 ADVANTECH (TAIWAN) PROVIDED PLANT MONITORING SOLUTION FOR WIND POWER PLANT 56
- 6□INDUSTRIAL ETHERNET MARKET, BY OFFERING□57
- 6.1∏INTRODUCTION∏58
- FIGURE 25 INDUSTRIAL ETHERNET MARKET, BY OFFERING 58
- FIGURE 26∏SERVICES SEGMENT TO WITNESS HIGHEST CAGR DURING FORECAST PERIOD∏59
- TABLE 2 INDUSTRIAL ETHERNET MARKET, BY OFFERING, 2018-2022 (USD MILLION) 59
- TABLE 3 INDUSTRIAL ETHERNET MARKET, BY OFFERING, 2023-2028 (USD MILLION) 59
- 6.2□HARDWARE□60
- TABLE 4 INDUSTRIAL ETHERNET MARKET, BY HARDWARE, 2018-2022 (USD MILLION) 60
- TABLE 5 INDUSTRIAL ETHERNET MARKET, BY HARDWARE, 2023-2028 (USD MILLION) 60
- TABLE 6 INDUSTRIAL ETHERNET MARKET, BY HARDWARE, 2018-2022 (THOUSAND UNITS) 61
- TABLE 7∏INDUSTRIAL ETHERNET MARKET, BY HARDWARE, 2023-2028 (THOUSAND UNITS)∏61
- 6.2.1∏SWITCHES∏61
- 6.2.1.1 Switches provide high security and durability in mission-critical environments 61
- 6.2.2 GATEWAYS 62
- 6.2.2.1 Gateways help in data transfer between sensor nodes and other configured devices using different protocols 62
- 6.2.3 ROUTERS 62
- 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3.1 Routers help transfer information from one network to another 6.2.3 Routers help transfer information from one network to another 6.2.3 Routers help transfer information from one network to another 6.2.3 Routers help transfer information from one network to another 6.2.3 Routers help transfer information from one network to another 6.2.3 Routers help transfer information from the first help transfer information from the
- 6.2.4□CONTROLLERS AND CONNECTORS□62
- 6.2.4.1 Controllers help decide priority of event processing to ensure proper functioning of overall system 6.2.4.1 controllers help decide priority of event processing to ensure proper functioning of overall system 6.2.4.1 controllers help decide priority of event processing to ensure proper functioning of overall system 6.2.4.1 controllers help decide priority of event processing to ensure proper functioning of overall system 6.2.4.1 controllers help decide priority of event processing to ensure proper functioning of overall system 6.2.4.1 controllers help decide priority of event processing to ensure proper functioning of overall system 6.2.4.1 controllers help decide priority of event processing to ensure proper function 6.2.4.1 controllers help decide priority of event processing to ensure proper function 6.2.4.1 controllers help decide priority of event processing to ensure proper function 6.2.4.1 controllers help decide priority of event processing to ensure proper function 6.2.4 controllers help decide priority function 6.2.4 controllers help decide function

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

- 6.2.5 COMMUNICATION INTERFACES AND CONVERTERS 63
- 6.2.5.1 Converters facilitate connection between two dissimilar media types 63
- 6.2.6 POWER SUPPLY DEVICES ☐ 63
- 6.2.6.1 Power management integrated circuits (PMICs) provide high level of performance and integration solutions for various industrial communication applications ☐63
- 6.2.7 OTHERS 63
- 6.3 SOFTWARE 64
- 6.3.1□NETWORKING MANAGEMENT SOFTWARE OPTIMIZES NETWORK EFFICIENCY AND MINIMIZES TOTAL COST OF OWNERSHIP□64 6.4□SERVICES□64
- 6.4.1□INDUSTRIAL COMMUNICATION SERVICES MAINLY INCLUDE INSTALLATION, NETWORK SECURITY, AND NETWORK MONITORING SERVICES⊓64
- 7∏INDUSTRIAL ETHERNET MARKET, BY PROTOCOL∏65
- 7.1□INTRODUCTION□66
- FIGURE 27□INDUSTRIAL ETHERNET MARKET, BY PROTOCOL□66
- FIGURE 28 TETHERCAT SEGMENT TO WITNESS HIGHEST CAGR DURING FORECAST PERIOD [] 66
- TABLE 8 INDUSTRIAL ETHERNET MARKET, BY PROTOCOL, 2018-2022 (USD MILLION) 67
- TABLE 9 INDUSTRIAL ETHERNET MARKET, BY PROTOCOL, 2023-2028 (USD MILLION) 67
- 7.2□PROFINET□68
- 7.2.1 PROFINET SUPPLEMENTS EXISTING PROFIBUS TECHNOLOGIES BY PROVIDING FAST DATA COMMUNICATION 68
- 7.3∏ETHERNET/IP∏68
- 7.3.1 ETHERNET/IP WIDELY USED IN HYBRID AND PROCESS INDUSTRIES 68
- 7.4∏ETHERCAT∏69
- 7.4.1 TETHERCAT SPECIFICALLY DESIGNED FOR FAST CONTROL DEMAND APPLICATIONS 69
- 7.5 MODBUS-TCP 69
- 7.5.1 MODBUS-TCP OFFERS HIGH LEVEL OF INTEROPERABILITY FOR INDUSTRIAL COMMUNICATION NETWORK DEVICES 69
- 7.6□POWERLINK□69
- 7.6.1∏ETHERNET POWERLINK ENABLES TRANSFER OF TIME-CRITICAL DATA IN SHORT DURATION∏69
- 7.7∏SERCOS III∏70
- 7.7.1 SERCOS III SUITABLE FOR COMMUNICATIONS IN PROCESS INDUSTRIES AS IT ENSURES LOW LATENCY IN DATA TRANSFER 7.8 CC-LINK IE 7.8 CC-LINK IE 7.0
- 7.8.1 CC-LINK IE SUPPORTS FLEXIBLE WIRING TOPOLOGIES, SUCH AS STAR, RING, AND LINE CONFIGURATION 70
- 8∏INDUSTRIAL ETHERNET MARKET, BY END-USE INDUSTRY∏71
- 8.1⊓INTRODUCTION⊓72
- FIGURE 29 | INDUSTRIAL ETHERNET MARKET, BY END-USE INDUSTRY | 72
- FIGURE 30 WATER & WASTEWATER SEGMENT TO WITNESS HIGHEST CAGR DURING FORECAST PERIOD 73
- TABLE 10∏INDUSTRIAL ETHERNET MARKET, BY END-USE INDUSTRY, 2018-2022 (USD MILLION)∏74
- TABLE 11 INDUSTRIAL ETHERNET MARKET, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 74
- 8.2 ☐ AUTOMOTIVE & TRANSPORTATION ☐ 75
- 8.2.1 INCREASING IMPLEMENTATION OF SMART MANUFACTURING TECHNOLOGIES IN AUTOMOBILE MANUFACTURING PLANTS TO BOOST ADOPTION OF INDUSTRIAL ETHERNET 75
- TABLE 12∏INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION, BY REGION, 2018-2022 (USD MILLION)∏76
- TABLE 13 INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION, BY REGION, 2023-2028 (USD MILLION) 76
- TABLE 14□INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN NORTH AMERICA, BY COUNTRY, 2018-2022 (USD MILLION)□76
- TABLE 15 INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN NORTH AMERICA, BY COUNTRY, 2023-2028 (USD MILLION) 77
- TABLE 16□INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN EUROPE, BY COUNTRY, 2018-2022 (USD

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

MILLION)∏77

TABLE 17□INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN EUROPE, BY COUNTRY, 2023-2028 (USD MILLION)□77

TABLE 18□INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN ASIA PACIFIC, BY COUNTRY, 2018-2022 (USD MILLION)□78

TABLE 19□INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN ASIA PACIFIC, BY COUNTRY, 2023-2028 (USD MILLION)□78

TABLE 20□INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN ROW, BY REGION, 2018-2022 (USD MILLION)□78

TABLE 21□INDUSTRIAL ETHERNET MARKET FOR AUTOMOTIVE & TRANSPORTATION IN ROW, BY REGION, 2023-2028 (USD MILLION)□79

8.3∏ELECTRICAL & ELECTRONICS∏79

8.3.1 INCREASING DEMAND FOR INDUSTRIAL ETHERNET SOLUTIONS IN ELECTRICAL & ELECTRONICS INDUSTRY TO MINIMIZE DOWNTIME, RUN OPERATIONS AT FULL SPEED, AND INCREASE PRODUCTIVITY 79

TABLE 22 INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS, BY REGION, 2018-2022 (USD MILLION) 80

TABLE 23 | INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS, BY REGION, 2023-2028 (USD MILLION) | 180

TABLE 24□INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN NORTH AMERICA, BY COUNTRY, 2018-2022 (USD MILLION)□80

TABLE 25□INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN NORTH AMERICA, BY COUNTRY, 2023-2028 (USD MILLION)□81

TABLE 26□INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN EUROPE, BY COUNTRY, 2018-2022 (USD MILLION)□81

TABLE 27 INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN EUROPE, BY COUNTRY, 2023-2028 (USD MILLION) 181

TABLE 28 INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN ASIA PACIFIC, BY COUNTRY, 2018-2022 (USD MILLION) 82

TABLE 29 INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN ASIA PACIFIC, BY COUNTRY, 2023-2028 (USD MILLION) 82

TABLE 30 INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN ROW, BY REGION, 2018-2022 (USD MILLION) 82 TABLE 31 INDUSTRIAL ETHERNET MARKET FOR ELECTRICAL & ELECTRONICS IN ROW, BY REGION, 2023-2028 (USD MILLION) 83 8.4 AREROSPACE & DEFENSE 83

8.4.1□INCREASING DEPLOYMENT OF INDUSTRIAL ETHERNET SOLUTIONS IN AEROSPACE & DEFENSE INDUSTRY TO ENSURE EFFECTIVE MANUFACTURING PROCESSES□83

TABLE 32 INDUSTRIAL ETHERNET MARKET FOR AEROSPACE & DEFENSE, BY REGION, 2018-2022 (USD MILLION) 84 TABLE 33 INDUSTRIAL ETHERNET MARKET FOR AEROSPACE & DEFENSE, BY REGION, 2023-2028 (USD MILLION) 84 8.5 IOIL & GAS 84

8.5.1 Increasing offshore oil and gas activities fueling adoption of automation solutions in oil & gas industry 0.5.1 Table 34 industrial ethernet market for oil & gas, by region, 2018-2022 (usd million) 0.5.1

TABLE 35[INDUSTRIAL ETHERNET MARKET FOR OIL & GAS, BY REGION, 2023-2028 (USD MILLION)[]85 ?

8.6 CHEMICAL & FERTILIZER 86

8.6.1 Growing use of industrial ethernet in Chemical industry to increase safety, efficiency, and sustainability 186

TABLE 36 INDUSTRIAL ETHERNET MARKET FOR CHEMICAL & FERTILIZER, BY REGION, 2018-2022 (USD MILLION) 87 TABLE 37 INDUSTRIAL ETHERNET MARKET FOR CHEMICAL & FERTILIZER, BY REGION, 2023-2028 (USD MILLION) 87 8.7 FOOD & BEVERAGE 87

8.7.1 INCREASING TREND OF AUTOMATION IN FOOD & BEVERAGE INDUSTRY THROUGHOUT MANUFACTURING PROCESS TO FUEL

Scotts International, EU Vat number: PL 6772247784

DEMAND FOR INDUSTRIAL ETHERNET | 87

TABLE 38□INDUSTRIAL ETHERNET MARKET FOR FOOD & BEVERAGE, BY REGION, 2018-2022 (USD MILLION)□88

TABLE 39□INDUSTRIAL ETHERNET MARKET FOR FOOD & BEVERAGE, BY REGION, 2023-2028 (USD MILLION)□88 8.8□PHARMACEUTICAL□88

8.8.1□INCREASING DEPLOYMENT OF AUTOMATION AND SENSING TECHNOLOGIES IN PHARMACEUTICAL INDUSTRY TO FUEL MARKET GROWTH⊓88

TABLE 40 INDUSTRIAL ETHERNET MARKET FOR PHARMACEUTICAL, BY REGION, 2018-2022 (USD MILLION) 89

TABLE 41 INDUSTRIAL ETHERNET MARKET FOR PHARMACEUTICAL, BY REGION, 2023-2028 (USD MILLION) 8.9 IENERGY & POWER 90

 $8.9.1 \\ \square COMMUNICATION \ NETWORKS \ PLAY \ INTEGRAL \ ROLE \ IN \ DATA \ AND \ INFORMATION \ EXCHANGE \ IN \ ENERGY \& POWER \ PLANTS \\ \square 90$ 

TABLE 42∏INDUSTRIAL ETHERNET MARKET FOR ENERGY & POWER, BY REGION, 2018-2022 (USD MILLION)∏90

TABLE 43 $\square$ INDUSTRIAL ETHERNET MARKET FOR ENERGY & POWER, BY REGION, 2023-2028 (USD MILLION) $\square$ 90 8.10 $\square$ MINING $\square$ 91

8.10.1 DEPLOYMENT OF AUTOMATION IN MINING & METALS INDUSTRY FOR IMPROVED PRODUCTIVITY AND ENHANCED WORKFORCE SAFETY TO BOOST MARKET GROWTH 91

TABLE 44∏INDUSTRIAL ETHERNET MARKET FOR MINING, BY REGION, 2018-2022 (USD MILLION)∏91

TABLE 45  $\square$  INDUSTRIAL ETHERNET MARKET FOR MINING, BY REGION, 2023-2028 (USD MILLION)  $\square$  92

8.11 ENGINEERING/FABRICATION 92

8.11.1 NETWORKING TECHNOLOGIES ENSURE CONSISTENT, UNINTERRUPTED MOBILE CONNECTIVITY FOR WORKERS IN ENGINEERING AND FABRICATION APPLICATIONS 92

TABLE 46 INDUSTRIAL ETHERNET MARKET FOR ENGINEERING/FABRICATION, BY REGION, 2018-2022 (USD MILLION) 92 TABLE 47 INDUSTRIAL ETHERNET MARKET FOR ENGINEERING/FABRICATION, BY REGION, 2023-2028 (USD MILLION) 8.12 WATER & WASTEWATER 93

8.12.1 GROWING ADOPTION OF LOW-COST, LOW-POWER SENSORS AND EDGE-COMPUTING DEVICES TO INCREASE EFFICIENCY IN WATER & WASTEWATER OPERATIONS TO BOOST MARKET GROWTH 93

TABLE 48 INDUSTRIAL ETHERNET MARKET FOR WATER & WASTEWATER, BY REGION, 2018-2022 (USD MILLION) 194 TABLE 49 INDUSTRIAL ETHERNET MARKET FOR WATER & WASTEWATER, BY REGION, 2023-2028 (USD MILLION) 194

8.13 OTHERS 94

TABLE 50 INDUSTRIAL ETHERNET MARKET FOR OTHERS, BY REGION, 2018-2022 (USD MILLION) 95

TABLE 51 INDUSTRIAL ETHERNET MARKET FOR OTHERS, BY REGION, 2023-2028 (USD MILLION) 95

9□INDUSTRIAL ETHERNET MARKET, BY REGION□96

9.1∏INTRODUCTION∏97

FIGURE 31∏INDUSTRIAL ETHERNET MARKET IN CHINA TO REGISTER HIGHEST CAGR FROM 2023 TO 2028∏97

TABLE 52[INDUSTRIAL ETHERNET MARKET, BY REGION, 2018-2022 (USD MILLION)[]98

TABLE 53 INDUSTRIAL ETHERNET MARKET, BY REGION, 2023-2028 (USD MILLION) 98

9.2 NORTH AMERICA □98

FIGURE 32 NORTH AMERICA: INDUSTRIAL ETHERNET MARKET SNAPSHOT 99

TABLE 54 INDUSTRIAL ETHERNET MARKET IN NORTH AMERICA, BY COUNTRY, 2018-2022 (USD MILLION) 199

TABLE 55∏INDUSTRIAL ETHERNET MARKET IN NORTH AMERICA, BY COUNTRY, 2023-2028 (USD MILLION)∏100

TABLE 56[INDUSTRIAL ETHERNET MARKET IN NORTH AMERICA, BY END-USE INDUSTRY, 2018-2022 (USD MILLION)[100]

TABLE 57□INDUSTRIAL ETHERNET MARKET IN NORTH AMERICA, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)□101 9.2.1□US□101

9.2.1.1 deal environment for innovation facilitated advancements in industrial ethernet 101

TABLE 58 | INDUSTRIAL ETHERNET MARKET IN US, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) | 102

TABLE 59∏INDUSTRIAL ETHERNET MARKET IN US, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)∏102

 $9.2.2 \square CANADA \square 103$ 

9.2.2.1 Growing investments in process and discrete industries to contribute to market growth 103

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

TABLE 60□INDUSTRIAL ETHERNET MARKET IN CANADA, BY END-USE INDUSTRY, 2018-2022(USD MILLION)□103
TABLE 61□INDUSTRIAL ETHERNET MARKET IN CANADA, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)□104
9.2.3□MEXICO□104

9.2.3.1 Rapid adoption of smart manufacturing procedures to drive market 104

TABLE 62 INDUSTRIAL ETHERNET MARKET IN MEXICO, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 105 TABLE 63 INDUSTRIAL ETHERNET MARKET IN MEXICO, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 105?

9.3∏EUROPE∏106

FIGURE 33 EUROPE: INDUSTRIAL ETHERNET MARKET SNAPSHOT 106

TABLE 64∏INDUSTRIAL ETHERNET MARKET IN EUROPE, BY COUNTRY, 2018-2022 (USD MILLION)∏107

TABLE 65∏INDUSTRIAL ETHERNET MARKET IN EUROPE, BY COUNTRY, 2023-2028 (USD MILLION)∏107

TABLE 66□INDUSTRIAL ETHERNET MARKET IN EUROPE, BY END-USE INDUSTRY, 2018-2022 (USD MILLION)□108 TABLE 67□INDUSTRIAL ETHERNET MARKET IN EUROPE, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)□108 9.3.1□UK□109

9.3.1.1 Growing adoption of automation to fuel market growth 109

TABLE 68 INDUSTRIAL ETHERNET MARKET IN UK, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 109 TABLE 69 INDUSTRIAL ETHERNET MARKET IN UK, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 110 9.3.2 GERMANY 110

9.3.2.1 Technological innovations related to automotive sector to fuel market growth 110

TABLE 70 INDUSTRIAL ETHERNET MARKET IN GERMANY, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 111 TABLE 71 INDUSTRIAL ETHERNET MARKET IN GERMANY, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 112 9.3.3 FRANCE 112

9.3.3.1 Government focus on promoting industrial sectors to fuel adoption of industrial ethernet solutions 112 TABLE 72 INDUSTRIAL ETHERNET MARKET IN FRANCE, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 113 TABLE 73 INDUSTRIAL ETHERNET MARKET IN FRANCE, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 113 9.3.4 ITALY 114

9.3.4.1 Focus on smart factories to fuel market growth 114

TABLE 74 INDUSTRIAL ETHERNET MARKET IN ITALY, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 114 TABLE 75 INDUSTRIAL ETHERNET MARKET IN ITALY, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 115 9.3.5 INDUSTRY, 2023-2028 (USD MILLION) 115

9.3.5.1 Development of automotive sector to drive market 115

TABLE 76 INDUSTRIAL ETHERNET MARKET IN SPAIN, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 116 TABLE 77 INDUSTRIAL ETHERNET MARKET IN SPAIN, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 116 9.3.6 INDUSTRY, 2023-2028 (USD MILLION) 117

TABLE 78□INDUSTRIAL ETHERNET MARKET IN REST OF EUROPE, BY END-USE INDUSTRY, 2018-2022(USD MILLION)□117
TABLE 79□INDUSTRIAL ETHERNET MARKET IN REST OF EUROPE, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)□118
9.4□ASIA PACIFIC□118

FIGURE 34 ASIA PACIFIC: INDUSTRIAL ETHERNET MARKET SNAPSHOT 119

TABLE 80[INDUSTRIAL ETHERNET MARKET IN ASIA PACIFIC, BY COUNTRY, 2018-2022 (USD MILLION)[]120
TABLE 81[INDUSTRIAL ETHERNET MARKET IN ASIA PACIFIC, BY COUNTRY, 2023-2028 (USD MILLION)[]120
TABLE 82[INDUSTRIAL ETHERNET MARKET IN ASIA PACIFIC, BY END-USE INDUSTRY, 2018-2022 (USD MILLION)[]121
TABLE 83[INDUSTRIAL ETHERNET MARKET IN ASIA PACIFIC, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)[]121
9.4.1[]CHINA[]122

9.4.1.1 $\square$ Growing use of industrial ethernet networks and solutions in automotive sector to boost market growth 122 TABLE 84 $\square$ INDUSTRIAL ETHERNET MARKET IN CHINA, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 123 TABLE 85 $\square$ INDUSTRIAL ETHERNET MARKET IN CHINA, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 123 9.4.2 $\square$ JAPAN 124

Scotts International, EU Vat number: PL 6772247784

9.4.2.1 Ongoing technological developments in different industries to lead to deployment of advanced and highly precise automation solutions 124

TABLE 86 INDUSTRIAL ETHERNET MARKET IN JAPAN, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 124 TABLE 87 INDUSTRIAL ETHERNET MARKET IN JAPAN, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 125 9.4.3 INDIA 125

9.4.3.1 $\square$ Ongoing government initiatives for automation of different industries to fuel market growth $\square$ 125 TABLE 88 $\square$ INDUSTRIAL ETHERNET MARKET IN INDIA, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) $\square$ 126 TABLE 89 $\square$ INDUSTRIAL ETHERNET MARKET IN INDIA, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) $\square$ 126 9.4.4 $\square$ SOUTH KOREA $\square$ 127

9.4.4.1 Growing adoption of industrial ethernet by electronic goods manufacturing companies to drive market 127 TABLE 90 INDUSTRIAL ETHERNET MARKET IN SOUTH KOREA, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) 127 TABLE 91 INDUSTRIAL ETHERNET MARKET IN SOUTH KOREA, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 128 9.4.5 REST OF ASIA PACIFIC 128

TABLE 92[INDUSTRIAL ETHERNET MARKET IN REST OF ASIA PACIFIC, BY END-USE INDUSTRY, 2018-2022 (USD MILLION)[129 TABLE 93[INDUSTRIAL ETHERNET MARKET IN REST OF ASIA PACIFIC, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)[129 9.5]REST OF THE WORLD[130]

TABLE 94 INDUSTRIAL ETHERNET MARKET IN ROW, BY REGION, 2018-2022 (USD MILLION) 130

TABLE 95 INDUSTRIAL ETHERNET MARKET IN ROW, BY REGION, 2023-2028 (USD MILLION) 130

TABLE 96[INDUSTRIAL ETHERNET MARKET IN ROW, BY END-USE INDUSTRY, 2018-2022 (USD MILLION)[131]

TABLE 97 INDUSTRIAL ETHERNET MARKET IN ROW, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) 131 9.5.1 SOUTH AMERICA 132

9.5.1.1 Rising deployment of factory automation solutions in different industries to boost market 132

TABLE 98 $\square$ INDUSTRIAL ETHERNET MARKET IN SOUTH AMERICA, BY END-USE INDUSTRY, 2018-2022(USD MILLION) $\square$ 132 TABLE 99 $\square$ INDUSTRIAL ETHERNET MARKET IN SOUTH AMERICA, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) $\square$ 133 9.5.2 $\square$ MIDDLE EAST $\square$ 133

9.5.2.1□Growing adoption of automation solutions in oil & gas industry to fuel market growth□133

TABLE 100 $\square$ INDUSTRIAL ETHERNET MARKET IN MIDDLE EAST, BY END-USE INDUSTRY, 2018-2022 (USD MILLION) $\square$ 134 TABLE 101 $\square$ INDUSTRIAL ETHERNET MARKET IN MIDDLE EAST, BY END-USE INDUSTRY, 2023-2028 (USD MILLION) $\square$ 134 9.5.3 $\square$ AFRICA $\square$ 135

9.5.3.1□Production increase in food & beverage, automotive, and pharmaceutical industries to drive market□135 TABLE 102□INDUSTRIAL ETHERNET MARKET IN AFRICA, BY END-USE INDUSTRY, 2018-2022 (USD MILLION)□135 TABLE 103□INDUSTRIAL ETHERNET MARKET IN AFRICA, BY END-USE INDUSTRY, 2023-2028 (USD MILLION)□136 10□COMPETITIVE LANDSCAPE□137

10.1 INTRODUCTION 137

TABLE 104 COMPANIES ADOPTED PRODUCT LAUNCHES AND DEVELOPMENTS AS KEY GROWTH STRATEGIES FROM 2019 TO 2022 137

TABLE 105 INDUSTRIAL ETHERNET MARKET: DEGREE OF COMPETITION 139

FIGURE 35∏MARKET SHARE OF KEY COMPANIES IN INDUSTRIAL ETHERNET MARKET, 2022∏139

10.2 COMPANY EVALUATION QUADRANT 141

10.2.1 | INDUSTRIAL ETHERNET MARKET | 141

10.2.1.1 Stars 141

10.2.1.2 Emerging leaders 141

10.2.1.3 Pervasive players 141

10.2.1.4 Participants 141

FIGURE 36∏INDUSTRIAL ETHERNET MARKET: COMPANY EVALUATION QUADRANT, 2022∏142

10.3 COMPETITIVE SITUATIONS AND TRENDS 143

10.3.1 PRODUCT LAUNCHES 143

Scotts International, EU Vat number: PL 6772247784

TABLE 106 INDUSTRIAL ETHERNET MARKET: PRODUCT LAUNCHES, JANUARY 2019-NOVEMBER 2022 143

TABLE 107 INDUSTRIAL ETHERNET MARKET: DEALS, JANUARY 2019-NOVEMBER 2022 144

?

11 COMPANY PROFILES 145

(Business overview, Products offered, Recent developments & MnM View)\*

11.1 KEY PLAYERS 145
11.1 SIEMENS 145

TABLE 108 SIEMENS: BUSINESS OVERVIEW 145 FIGURE 37 SIEMENS: COMPANY SNAPSHOT 146

TABLE 109∏SIEMENS: PRODUCTS/SOLUTIONS/SERVICES OFFERED∏146

TABLE 110 SIEMENS: PRODUCT LAUNCHES 147

TABLE 111 SIEMENS: DEALS 148
11.1.2 ROCKWELL AUTOMATION 150

TABLE 112 ROCKWELL AUTOMATION: BUSINESS OVERVIEW 150 FIGURE 38 ROCKWELL AUTOMATION: COMPANY SNAPSHOT 151

TABLE 113 ROCKWELL AUTOMATION: PRODUCTS/SOLUTIONS/SERVICES OFFERED 151

TABLE 114 ROCKWELL AUTOMATION: PRODUCT LAUNCHES 152

TABLE 115 ROCKWELL AUTOMATION: DEALS 153

11.1.3 CISCO SYSTEMS 155

TABLE 116 CISCO SYSTEMS: BUSINESS OVERVIEW 155 FIGURE 39 CISCO SYSTEMS: COMPANY SNAPSHOT 156

TABLE 117 CISCO SYSTEMS: PRODUCTS/SOLUTIONS/SERVICES OFFERED 156

TABLE 118 CISCO SYSTEMS: PRODUCT LAUNCHES 157

TABLE 119□CISCO SYSTEMS: DEALS□157

11.1.4□OMRON□159

TABLE 120 OMRON: BUSINESS OVERVIEW 159
FIGURE 40 OMRON: COMPANY SNAPSHOT 160

TABLE 121 OMRON: PRODUCTS/SOLUTIONS/SERVICES OFFERED 160

TABLE 122 OMRON: PRODUCT LAUNCHES 161

TABLE 123 OMRON: DEALS 163

11.1.5 MOXA 164

TABLE 124 MOXA: BUSINESS OVERVIEW 164

TABLE 125 MOXA: PRODUCTS/SOLUTIONS/SERVICES OFFERED 164

TABLE 126 MOXA: PRODUCT LAUNCHES 166

11.1.6 BELDEN 168

TABLE 127 BELDEN: BUSINESS OVERVIEW 168
FIGURE 41 BELDEN: COMPANY SNAPSHOT 169

TABLE 128 BELDEN: PRODUCTS/SOLUTIONS/SERVICES OFFERED 170

TABLE 129 BELDEN: PRODUCT LAUNCHES 170

TABLE 130 BELDEN: DEALS 171 11.1.7 HUAWEI TECHNOLOGIES 172

TABLE 131 HUAWEI TECHNOLOGIES: BUSINESS OVERVIEW 172 FIGURE 42 HUAWEI TECHNOLOGIES: COMPANY SNAPSHOT 173

TABLE 132 HUAWEI TECHNOLOGIES: PRODUCTS/SOLUTIONS/SERVICES OFFERED 173

TABLE 133 HUAWEI TECHNOLOGIES: PRODUCT LAUNCHES 174

TABLE 134 HUAWEI TECHNOLOGIES: DEALS 174
TABLE 135 HUAWEI TECHNOLOGIES: OTHERS 174

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

11.1.8 SICK 175

TABLE 136 SICK: BUSINESS OVERVIEW 175 FIGURE 43 SICK: COMPANY SNAPSHOT 176

TABLE 137 SICK: PRODUCTS/SOLUTIONS/SERVICES OFFERED 177

TABLE 138 SICK: PRODUCT LAUNCHES 178

TABLE 139 SICK: DEALS 178
11.1.9 SCHNEIDER ELECTRIC 179

TABLE 140 SCHNEIDER ELECTRIC: BUSINESS OVERVIEW 179 FIGURE 44 SCHNEIDER ELECTRIC: COMPANY SNAPSHOT 180

TABLE 141 SCHNEIDER ELECTRIC: PRODUCTS/SOLUTIONS/SERVICES OFFERED 181

TABLE 142 SCHNEIDER ELECTRIC: DEALS 182

11.1.10 | ABB | 183

TABLE 143 ABB: BUSINESS OVERVIEW 183 FIGURE 45 ABB: COMPANY SNAPSHOT 184

TABLE 144 ABB: PRODUCTS/SOLUTIONS/SERVICES OFFERED 184

TABLE 145 ABB: DEALS 185

\*Details on Business overview, Products offered, Recent developments & MnM View might not be captured in case of unlisted companies.

11.2 OTHER PLAYERS 186

11.2.1 GE GRID SOLUTIONS 186

11.2.2 ADVANTECH 187

11.2.3 HMS NETWORKS 188

11.2.4∏IFM ELECTRONIC∏189

 $11.2.5 \verb|| WEIDMULLER \verb||| 190$ 

11.2.6 PATTON 190

11.2.7 BECKHOFF AUTOMATION 191

11.2.8 HONEYWELL 191

11.2.9 □ AAEON □ 192

11.2.10 TURCK 192

11.2.11 BOSCH REXROTH 193

11.2.12 HITACHI 194

TABLE 146 HITACHI: COMPANY OVERVIEW 194

11.2.13∏ERICSSON∏195

TABLE 147□ERICSSON: COMPANY OVERVIEW□195 11.2.14□MITSUBISHI ELECTRIC GROUP□196

TABLE 148 MITSUBISHI ELECTRIC GROUP: COMPANY OVERVIEW 196

11.2.15 CHAOS PRIME 196

TABLE 149 CHAOS PRIME: COMPANY OVERVIEW 196

12□APPENDIX□197

12.1 DISCUSSION GUIDE 197

12.2 KNOWLEDGESTORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL 200

12.3 CUSTOMIZATION OPTIONS 202

12.4 RELATED REPORTS 202

12.5 AUTHOR DETAILS 203

Scotts International, EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com



To place an Order with Scotts International:

**Scotts International. EU Vat number: PL 6772247784** tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

☐ - Print this form

# Industrial Ethernet Market with Recession Impact Analysis by Offering (Hardware, Software, Services), Protocol (PROFINET, EtherNet/IP), End-use Industry (Automotive & Transportation, Electrical & Electronics) and Region- Global Forecast to 2028

Market Report | 2023-01-17 | 204 pages | MarketsandMarkets

| <ul> <li>Complete the</li> <li>Send as a sca</li> </ul> | and a second the second of Occasion in the marking of Constitution of Constitu |            |
|---|--|------------|
| - Send as a sca   | anned email to support@scotts-international.com  |            |
|   |  |            |
| RDER FORM:  |  |            |
| Select license  | License  | Price      |
|   | Single User  | \$4950.00  |
|   | Multi User   | \$6650.00  |
|   | Corporate License  | \$8150.00  |
|   | Enterprise Site License  | \$10000.00 |
|   |  | VAT        |
|   |  | Total      |
|   | levant license option. For any questions please contact support@scotts-international.com or 00 at 23% for Polish based companies, individuals and EU based companies who are unable to p   |            |
| ** VAT will be added                                    | ed at 23% for Polish based companies, individuals and EU based companies who are unable to p   |            |
| ** VAT will be added                                    |  |            |
| ** VAT will be added                                    | ed at 23% for Polish based companies, individuals and EU based companies who are unable to p   |            |
|   | at 23% for Polish based companies, individuals and EU based companies who are unable to post of the polish based companies.  Phone*  |            |
| ** VAT will be added Email* First Name*                 | at 23% for Polish based companies, individuals and EU based companies who are unable to post of the polish based companies.  Phone*  |            |
| ** VAT will be added Email* First Name*  ob title*      | Phone*  Last Name*   |            |

| Date      | 2025-05-20 |
|-----------|------------|
| Signature |            |
|           |            |
|           |            |