Global Digital Substation Market Report by Module (Hardware, Fiber Optic Communication Network and SCADA), by Type (Transmission Substation, and Distribution Substation), by Voltage (Up to 220 kV, 220–550 kV, and Above 550 kV), by Industry (Utility, Metal, Mining, Oil & Gas and Transportation) and by Region - Global Forecast to 2023.

Market Scenario:

Global digital substation market has witnessed phenomenal growth in recent years, and is expected to witness the same growth in the forecast period. The industrial development across the globe has increased digitization in many sectors. Innovation in the digitization market is not only related to the invention of new products, but also to the upgrades of the available products and technologies. One such innovation is digital substations. Substations are a part of electrical generation, distribution, and transmission systems. They transform current from high voltage to low voltage and vice versa with the help of transformers. Digital substations comprise the introduction of intelligence into the substation systems. The transformation of the power generation from a wired to an optical network, is the reason for the evolution of digital substations. Also, it is a stable supply system for power generation. Digital substations are governed by the International Electro-technical Commission (IEC) code IEC 61850. Bay level, process level and station level are the three main functional levels of digital substations. Signals are transmitted from the process work station. The system protection and control processes are performed in the bay level work station. At the station level, the engineering and report activities are accomplished. An optical coherence tomography (OCT) is used to build the digital substations, and requires a lot less space compared to the analogue substations. Digital substations enhance the measurement accuracy and recording of the generated information. With the installation of digital substations, material cost can be reduced substantially as fewer cables and less space are required. The maintenance of digital substations is easier than that of traditional substations due to the integrated standardized interface. The integration of advanced technology and innovative practices such as the use of Ethernet in digital substations has increased the security system of digital substations.

Global digital substation market has been segmented based on module, type, voltage, industry and region. Based on module the market is segmented into hardware, fiber optic communication network and SCADA. Among these the hardware, is projected to dominate the digital substation market through 2023. The hardware module includes components such as transformers, bus bars, protection devices, and interfacing units. Transformers form a major part of the market, as they are the primary components that are installed in the substation. These hardware components have the largest share of the overall market, owing to their extensive use in digital substations. Based on type the market is segmented as transmission substation, and distribution substation. Distribution substation dominated the market in 2016 and is projected to be the fastest-growing segment for digital substation. Distribution substation typically operates at low voltage, and deliver electric energy directly to industrial and residential sector. The phenomenal growth in urbanization and industrialization across the world is expected to boost the growth for distribution substation market during the forecast period. Based on the Voltage, the market is segmented into up to 220 kV, 220–550 kV, and above 550 kV. Above 550 kV dominated the market in 2016 and is projected to be the
The global digital substation market is expected to grow at ~7.5% CAGR during the forecast period. The suitability of above 550 kV substation is favorable in all industry applications. Based on the industry, the market has been segmented into utility, metal, mining, oil & gas and transportation. Utility sector dominated the market in 2016 and is projected to be the fastest-growing application over the next five years. The utility industry is one of the booming application areas pertaining to digital substations, owing to the high demand-supply gap in energy in most of the developing and developed nations. Its growth can be attributed to the increase in demand for renewable energy sources, such as wind, solar, and hydro to meet the consumers demand for power generation. Digital substations have a large scope in the utility industry as these systems are used in transmitting and distributing power.

The digital substation market is expected to have a huge number of advancements over the forecast period, owing to continuous developments in power industry coupled with growing technological advancement preferences for high end features in transmission and distribution system. The market is also expected to have high expansion activities by multinationals and well-established companies.

**Market Segmentation:**

The global digital substation market is expected to witness a remarkable growth during the forecast period. This is due to the considerable increase in transmission & distribution network and growing demand for power. Asia Pacific is expected to remain the dominant region in terms of demand for digital substation. The power sector holds a strong ground in Asia Pacific, owing to a high demand of energy coupled with growing conventional and non-conventional power generation plants. The digital substation market in Asia Pacific is also being pushed towards providing advance and reliable solution for transmission and distribution activity.

**Key Players:**

The key players of global digital substation market are ABB Ltd. (Switzerland), Siemens AG (Germany), General Electric Company (U.S.), Schneider Electric (France), Honeywell International Inc. (U.S.), Cisco Systems, Inc. (U.S.), Eaton Corporation plc (Ireland), Emerson Electric Co. (U.S.), NR Electric Co., Ltd. (China) and Larsen & Toubro (India).
7.4.2 MARKET ESTIMATES & FORECAST BY REGION, 2017-2023

8 GLOBAL DIGITAL SUBSTATION MARKET, BY INDUSTRY

8.1 INTRODUCTION

8.2 UTILITY
8.2.1 MARKET ESTIMATES & FORECAST, 2017-2023
8.2.2 MARKET ESTIMATES & FORECAST BY REGION, 2017-2023

8.3 METAL
8.3.1 MARKET ESTIMATES & FORECAST, 2017-2023
8.3.2 MARKET ESTIMATES & FORECAST BY REGION, 2017-2023

8.4 MINING
8.4.1 MARKET ESTIMATES & FORECAST, 2017-2023
8.4.2 MARKET ESTIMATES & FORECAST BY REGION, 2017-2023

8.5 OIL & GAS
8.5.1 MARKET ESTIMATES & FORECAST, 2017-2023
8.5.2 MARKET ESTIMATES & FORECAST BY REGION, 2017-2023

8.6 TRANSPORTATION
8.6.1 MARKET ESTIMATES & FORECAST, 2017-2023
8.6.2 MARKET ESTIMATES & FORECAST BY REGION, 2017-2023

9 GLOBAL DIGITAL SUBSTATION MARKET, BY REGION

9.1 INTRODUCTION

9.2 NORTH AMERICA
9.2.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.2.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.2.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.2.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.2.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.2.5.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.2.5.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.2.5.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.2.5.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.2.5.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.2.6 CANADA
9.2.6.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.2.6.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.2.6.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.2.6.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.2.6.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023

9.3 EUROPE
9.3.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.3.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.3.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.3.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.3.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.3.5.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.3.5.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.3.5.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.3.5.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.3.5.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.3.6 GERMANY
9.3.6.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.3.6.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.3.6.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.3.6.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.3.6.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.3.7 FRANCE
9.3.7.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.3.7.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.3.7.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.3.7.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.3.7.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.3.9 ITALY
9.3.9.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.3.9.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.3.9.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.3.9.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.3.9.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.3.9 REST OF EUROPE
9.3.9.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.3.9.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.3.9.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.3.9.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.3.9.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.4 ASIA PACIFIC
9.4.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.4.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.4.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.4.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.4.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.4.5 CHINA
9.4.5.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.4.5.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.4.5.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.4.5.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.4.5.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.4.6 JAPAN
9.4.6.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.4.6.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.4.6.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.4.6.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.4.6.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.4.7 INDIA
9.4.7.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.4.7.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.4.7.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.4.7.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.4.7.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.4.9 REST OF ASIA PACIFIC
9.4.9.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.4.9.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.4.9.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.4.9.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.4.9.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023
9.5 REST OF THE WORLD
9.5.1 MARKET ESTIMATES & FORECAST, 2017-2023
9.5.2 MARKET ESTIMATES & FORECAST BY MODULE, 2017-2023
9.5.3 MARKET ESTIMATES & FORECAST BY TYPE, 2017-2023
9.5.4 MARKET ESTIMATES & FORECAST BY VOLTAGE, 2017-2023
9.5.5 MARKET ESTIMATES & FORECAST BY INDUSTRY, 2017-2023

10 COMPETITIVE LANDSCAPE

11 COMPANY PROFILE
11.1 ABB LTD. (SWITZERLAND)
11.1.1 COMPANY OVERVIEW
11.1.2 PRODUCTS/SERVICES OFFERING
11.1.3 FINANCIAL OVERVIEW
11.1.4 KEY DEVELOPMENTS
11.1.5 STRATEGY
11.1.6 SWOT ANALYSIS
11.2 SIEMENS AG (GERMANY)
11.2.1 COMPANY OVERVIEW
11.2.2 PRODUCTS/SERVICES OFFERING
11.2.3 FINANCIAL OVERVIEW
11.2.4 KEY DEVELOPMENTS
11.2.5 STRATEGY
11.2.6 SWOT ANALYSIS
11.3 GENERAL ELECTRIC COMPANY (U.S.)
11.3.1 COMPANY OVERVIEW
11.3.2 PRODUCTS/SERVICES OFFERING
11.3.3 FINANCIAL OVERVIEW
11.3.4 KEY DEVELOPMENTS
11.3.5 STRATEGY
11.3.6 SWOT ANALYSIS
11.4 SCHNEIDER ELECTRIC (FRANCE)
11.4.1 COMPANY OVERVIEW
11.4.2 PRODUCTS/SERVICES OFFERING
11.4.3 FINANCIAL OVERVIEW
11.4.4 KEY DEVELOPMENTS
11.4.5 STRATEGY
11.4.6 SWOT ANALYSIS
11.5 HONEYWELL INTERNATIONAL INC. (U.S.)
11.5.1 COMPANY OVERVIEW
11.5.2 PRODUCTS/SERVICES OFFERING
11.5.3 FINANCIAL OVERVIEW
LIST OF TABLES

TABLE 1 GLOBAL DIGITAL SUBSTATION MARKET: BY REGION, 2017-2023
TABLE 2 NORTH AMERICA DIGITAL SUBSTATION MARKET: BY COUNTRY, 2017-2023
TABLE 3 EUROPE DIGITAL SUBSTATION MARKET: BY COUNTRY, 2017-2023
TABLE 4 ASIA PACIFIC DIGITAL SUBSTATION MARKET: BY COUNTRY, 2017-2023
TABLE 5 ROW DIGITAL SUBSTATION MARKET: BY COUNTRY, 2017-2023
TABLE 6 GLOBAL DIGITAL SUBSTATION MARKET, BY MODULE, BY REGIONS, 2017-2023
TABLE 7 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY MODULE, BY COUNTRY, 2017-2023
TABLE 8 EUROPE DIGITAL SUBSTATION MARKET, BY TYPE, BY COUNTRY, 2017-2023
TABLE 9 ASIA PACIFIC DIGITAL SUBSTATION MARKET BY MODULE, BY COUNTRY, 2017-2023
TABLE 10 ROW DIGITAL SUBSTATION MARKET BY MODULE, BY COUNTRY, 2017-2023
TABLE 11 GLOBAL AIRLESS PACKAGING BY TYPE: BY REGIONS, 2017-2023
TABLE 12 NORTH AMERICA DIGITAL SUBSTATION MARKET BY TYPE: BY COUNTRY, 2017-2023
TABLE 13 EUROPE DIGITAL SUBSTATION MARKET BY TYPE: BY COUNTRY, 2017-2023
TABLE 14 ASIA PACIFIC DIGITAL SUBSTATION MARKET BY TYPE: BY COUNTRY, 2017-2023
TABLE 15 ROW DIGITAL SUBSTATION MARKET BY TYPE: BY COUNTRY, 2017-2023
TABLE 16 GLOBAL DIGITAL SUBSTATION MARKET, BY VOLTAGE, BY REGIONS, 2017-2023
TABLE 17 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY VOLTAGE, BY COUNTRY, 2017-2023
TABLE 18 EUROPE DIGITAL SUBSTATION MARKET, BY VOLTAGE, BY COUNTRY, 2017-2023
TABLE 19 ASIA PACIFIC DIGITAL SUBSTATION MARKET, BY VOLTAGE, BY COUNTRY, 2017-2023
TABLE 20 ROW DIGITAL SUBSTATION MARKET, BY VOLTAGE, BY COUNTRY, 2017-2023
TABLE 21 GLOBAL DIGITAL SUBSTATION MARKET, BY INDUSTRY, BY REGIONS, 2017-2023
TABLE 22 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY INDUSTRY, BY COUNTRY, 2017-2023
TABLE 23 EUROPE DIGITAL SUBSTATION MARKET, BY INDUSTRY, BY COUNTRY, 2017-2023
TABLE 24 ASIA PACIFIC DIGITAL SUBSTATION MARKET, BY INDUSTRY, BY COUNTRY, 2017-2023
TABLE 25 ROW DIGITAL SUBSTATION MARKET, BY INDUSTRY, BY COUNTRY, 2017-2023
TABLE 26 GLOBAL PRODUCT MARKET: BY REGION, 2017-2023
TABLE 27 GLOBAL MATERIAL MARKET: BY REGION, 2017-2023
TABLE 28 GLOBAL PACKAGING TYPE MARKET: BY REGION, 2017-2023
TABLE 29 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY COUNTRY
TABLE 30 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY MODULE
TABLE 31 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY TYPE
TABLE 32 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY VOLTAGE
TABLE 33 NORTH AMERICA DIGITAL SUBSTATION MARKET, BY INDUSTRY
TABLE 34 EUROPE: DIGITAL SUBSTATION MARKET, BY COUNTRY
TABLE 35 EUROPE: DIGITAL SUBSTATION MARKET, BY MODULE
TABLE 36 EUROPE: DIGITAL SUBSTATION MARKET, BY TYPE
TABLE 37 EUROPE: DIGITAL SUBSTATION MARKET, BY VOLTAGE
TABLE 38 EUROPE: DIGITAL SUBSTATION MARKET, BY INDUSTRY
TABLE 39 ASIA PACIFIC: DIGITAL SUBSTATION MARKET, BY COUNTRY
TABLE 40 ASIA PACIFIC: DIGITAL SUBSTATION MARKET, BY MODULE
TABLE 41 ASIA PACIFIC: DIGITAL SUBSTATION MARKET, BY VOLTAGE
TABLE 42 ASIA PACIFIC: DIGITAL SUBSTATION MARKET, BY TYPE
TABLE 43 ASIA PACIFIC: DIGITAL SUBSTATION MARKET, BY INDUSTRY
TABLE 44 ROW: DIGITAL SUBSTATION MARKET, BY REGION
TABLE 45 ROW DIGITAL SUBSTATION MARKET, BY MODULE
TABLE 46 ROW DIGITAL SUBSTATION MARKET, BY TYPE
TABLE 47 ROW DIGITAL SUBSTATION MARKET, BY VOLTAGE
TABLE 48 ROW DIGITAL SUBSTATION MARKET, BY INDUSTRY

LIST OF FIGURES

FIGURE 1 RESEARCH PROCESS OF MRFR
FIGURE 2 TOP DOWN & BOTTOM UP APPROACH
FIGURE 3 MARKET DYNAMICS
FIGURE 4 IMPACT ANALYSIS: MARKET DRIVERS
FIGURE 5 IMPACT ANALYSIS: MARKET RESTRAINTS
FIGURE 6 PORTER’S FIVE FORCES ANALYSIS
FIGURE 7 VALUE CHAIN ANALYSIS
FIGURE 8 GLOBAL DIGITAL SUBSTATION MARKET SHARE, BY MODULE, 2016 (%)
FIGURE 9 GLOBAL DIGITAL SUBSTATION MARKET, BY MODULE, 2015-2023 (USD MILLION)
FIGURE 10 GLOBAL DIGITAL SUBSTATION MARKET SHARE, BY VOLTAGE, 2016 (%)
FIGURE 11 GLOBAL DIGITAL SUBSTATION MARKET, BY VOLTAGE, 2015-2023 (USD MILLION)
FIGURE 12 GLOBAL DIGITAL SUBSTATION MARKET SHARE, BY TYPE, 2016 (%)
FIGURE 13 GLOBAL DIGITAL SUBSTATION MARKET, BY TYPE, 2015-2023 (USD MILLION)
FIGURE 14 GLOBAL DIGITAL SUBSTATION MARKET SHARE, BY INDUSTRY, 2016 (%)
FIGURE 15 GLOBAL DIGITAL SUBSTATION MARKET, BY INDUSTRY, 2015-2023 (USD MILLION)
FIGURE 16 GLOBAL DIGITAL SUBSTATION MARKET SHARE (%), BY REGION, 2016
FIGURE 17 GLOBAL DIGITAL SUBSTATION MARKET, BY REGION, 2015-2023 (USD MILLION)
FIGURE 18 NORTH AMERICA DIGITAL SUBSTATION MARKET SHARE (%), 2016
FIGURE 19 NORTH AMERICA DIGITAL SUBSTATION MARKET BY COUNTRY, 2015-2023 (USD MILLION)
FIGURE 20 EUROPE DIGITAL SUBSTATION MARKET SHARE (%), 2016
FIGURE 21 EUROPE DIGITAL SUBSTATION MARKET BY COUNTRY, 2015-2023 (USD MILLION)
FIGURE 22 ASIA PACIFIC DIGITAL SUBSTATION MARKET SHARE (%), 2016
FIGURE 23 ASIA PACIFIC DIGITAL SUBSTATION MARKET BY COUNTRY, 2015-2023 (USD MILLION)
FIGURE 24 REST OF THE WORLD DIGITAL SUBSTATION MARKET SHARE (%), 2016
FIGURE 25 REST OF THE WORLD DIGITAL SUBSTATION MARKET BY COUNTRY, 2015-2023 (USD MILLION)