Professional Certificate in Operational Technology Engineer (United Kingdom)

Data Analytics for Operational Technology

A2P
Acronym for Application-to-Person, refers to the process of sending messages from an application to a person, commonly used in mobile marketing and notifications. Related terms include P2P, Person-to-Person, and A2A, Application-to-Application. In the context of Data Analytics for Operational Technology, A2P messaging can be used to send alerts and notifications to operators and managers regarding system performance and issues.

API
Stands for Application Programming Interface, a set of rules and protocols that enables different applications to communicate with each other. In Data Analytics for Operational Technology, APIs are used to integrate different systems and devices, allowing for the exchange of data and information. Related terms include API Gateway, API Management, and API Security.

Asset Management
Refers to the process of managing and maintaining physical assets such as equipment, machinery, and vehicles. In the context of Operational Technology, asset management involves using data and analytics to optimize asset performance, reduce downtime, and improve overall efficiency. Related terms include Asset Tracking, Asset Monitoring, and Asset Optimization.

Big Data
Refers to the large amounts of structured and unstructured data that are generated by organizations and systems. In Data Analytics for Operational Technology, big data is used to analyze and gain insights into system performance, customer behavior, and market trends. Related terms include Big Data Analytics, Big Data Management, and Big Data Security.

Cloud Computing
Refers to the delivery of computing services over the internet, including storage, processing, and applications. In the context of Operational Technology, cloud computing is used to host and manage data and applications, allowing for greater flexibility and scalability. Related terms include Cloud Storage, Cloud Security, and Cloud Migration.

Condition-Based Maintenance
Refers to the practice of performing maintenance on assets based on their condition, rather than on a fixed schedule. In Data Analytics for Operational Technology, condition-based maintenance involves using sensor data and analytics to predict when maintenance is required, reducing downtime and costs. Related terms include Predictive Maintenance, Preventive Maintenance, and Reliability-Centered Maintenance.

Cybersecurity
Refers to the practice of protecting computer systems and data from cyber threats such as hacking and

malware. In the context of Operational Technology, cybersecurity involves using security protocols and measures to protect systems and data from cyber attacks, ensuring the integrity and availability of systems and data. Related terms include Cyber Threat, Cyber Attack, and Cyber Risk.

Data Analytics
Refers to the process of examining data to gain insights and meaning. In the context of Operational Technology, data analytics involves using statistical and machine learning techniques to analyze data from sensors, systems, and applications, providing valuable insights into system performance and operation. Related terms include Data Mining, Data Science, and Data Visualization.

Data Mining
Refers to the process of automatically discovering patterns and relationships in large datasets. In Data Analytics for Operational Technology, data mining involves using algorithms and techniques to identify trends and patterns in data, providing valuable insights into system performance and operation. Related terms include Data Analytics, Data Science, and Data Visualization.

Data Science
Refers to the field of study that involves using scientific methods and processes to extract knowledge and insights from data. In the context of Operational Technology, data science involves using statistical and machine learning techniques to analyze data from sensors, systems, and applications, providing valuable insights into system performance and operation. Related terms include Data Analytics, Data Mining, and Data Visualization.

Data Visualization
Refers to the process of presenting data in a visual format, such as charts and graphs. In Data Analytics for Operational Technology, data visualization involves using tools and techniques to present data in a clear and concise manner, providing valuable insights into system performance and operation. Related terms include Data Analytics, Data Mining, and Data Science.

Digital Twin
Refers to a virtual replica of a physical asset or system. In the context of Operational Technology, digital twin involves using data and analytics to create a virtual model of a physical asset or system, allowing for real-time monitoring and simulation. Related terms include Digital Transformation, Digitalization, and Industry 4.0.

Edge Computing
Refers to the practice of processing data at the edge of a network, rather than in a centralized location. In Data Analytics for Operational Technology, edge computing involves using devices and gateways to process data in real-time, reducing latency and improving system performance. Related terms include Edge Device, Edge Gateway, and Edge Network.

Industrial Control System
Refers to a system that is used to control and monitor industrial processes. In the context of Operational Technology, industrial control systems involve using devices and software to control and monitor industrial processes, such as manufacturing and production. Related terms include Industrial Automation, Industrial

Internet of Things, and Industrial Control System Security.

Industrial Internet of Things
Refers to the network of devices and sensors that are used to collect and transmit data in industrial settings. In Data Analytics for Operational Technology, industrial internet of things involves using devices and sensors to collect data on equipment and process performance, providing valuable insights into system performance and operation. Related terms include Industrial Control System, Industrial Automation, and Industrial Internet of Things Security.

Internet of Things
Refers to the network of devices and sensors that are used to collect and transmit data. In the context of Operational Technology, internet of things involves using devices and sensors to collect data on equipment and process performance, providing valuable insights into system performance and operation. Related terms include Industrial Internet of Things, Internet of Things Security, and Internet of Things Analytics.

Machine Learning
Refers to the field of study that involves using algorithms and statistical models to enable computers to learn from data. In Data Analytics for Operational Technology, machine learning involves using algorithms and models to analyze data and make predictions about system performance and operation. Related terms include Deep Learning, Artificial Intelligence, and Natural Language Processing.

Maintenance, Repair, and Operations
Refers to the processes and activities that are involved in maintaining and repairing physical assets. In the context of Operational Technology, maintenance, repair, and operations involve using data and analytics to optimize maintenance and repair activities, reducing downtime and costs.

Network Architecture
Refers to the design and structure of a network. In Data Analytics for Operational Technology, network architecture involves using devices and protocols to design and implement a network that is secure and reliable. Related terms include Network Security, Network Management, and Network Performance.

Operational Technology
Refers to the use of technology to monitor and control physical assets and processes. In the context of Data Analytics, operational technology involves using data and analytics to optimize operational performance and efficiency. Related terms include Information Technology, Industrial Control System, and Industrial Automation.

Predictive Maintenance
Refers to the practice of using data and analytics to predict when maintenance is required. In the context of Operational Technology, predictive maintenance involves using sensor data and analytics to predict when maintenance is required, reducing downtime and costs. Related terms include Preventive Maintenance, Reliability-Centered Maintenance, and Condition-Based Maintenance.

Real-Time Data
Refers to data that is collected and processed in real-time. In Data Analytics for Operational Technology,

real-time data involves using sensors and devices to collect and process data in real-time, providing valuable insights into system performance and operation. Related terms include Real-Time Analytics, Real-Time Processing, and Real-Time Monitoring.

Reliability-Centered Maintenance
Refers to the practice of using data and analytics to identify and address reliability issues. In the context of Operational Technology, reliability-centered maintenance involves using data and analytics to identify and address reliability issues, reducing downtime and costs. Related terms include Predictive Maintenance, Preventive Maintenance, and Condition-Based Maintenance.

Root Cause Analysis
Refers to the process of identifying the root cause of a problem or issue. In Data Analytics for Operational Technology, root cause analysis involves using data and analytics to identify the root cause of a problem or issue, providing valuable insights into system performance and operation. Related terms include Root Cause, Cause-and-Effect Analysis, and Failure Mode and Effects Analysis.

SCADA
Stands for Supervisory Control and Data Acquisition, a type of system that is used to monitor and control industrial processes. In the context of Operational Technology, SCADA involves using devices and software to monitor and control industrial processes, such as manufacturing and production. Related terms include Industrial Control System, Industrial Automation, and Industrial Internet of Things.

Sensor
Refers to a device that is used to detect and measure physical parameters such as temperature and pressure. In Data Analytics for Operational Technology, sensors involve using devices to collect and transmit data on equipment and process performance, providing valuable insights into system performance and operation. Related terms include Sensor Data, Sensor Network, and Sensor Management.

Six Sigma
Refers to a methodology that is used to improve the quality of processes and products. In the context of Operational Technology, six sigma involves using data and analytics to identify and address quality issues, reducing defects and variations. Related terms include Lean Manufacturing, Total Quality Management, and Continuous Improvement.

Time Series Analysis
Refers to the process of analyzing data that is collected over time. In Data Analytics for Operational Technology, time series analysis involves using statistical and machine learning techniques to analyze data that is collected over time, providing valuable insights into system performance and operation. Related terms include Time Series Data, Time Series Forecasting, and Time Series Modeling.

Total Productive Maintenance
Refers to a methodology that is used to maintain and improve the productivity of equipment and processes. In the context of Operational Technology, total productive maintenance involves using data and analytics to identify and address maintenance issues, reducing downtime and costs.

User Experience
Refers to the experience that a user has when interacting with a system or application. In Data Analytics for Operational Technology, user experience involves using data and analytics to design and improve the user experience, providing valuable insights into system performance and operation. Related terms include User Interface, User Centered Design, and Human Computer Interaction.

Workflow Automation
Refers to the use of technology to automate and streamline business processes. In the context of Operational Technology, workflow automation involves using data and analytics to automate and streamline operational processes, reducing errors and costs. Related terms include Business Process Automation, Business Process Management, and Business Process Re-engineering.