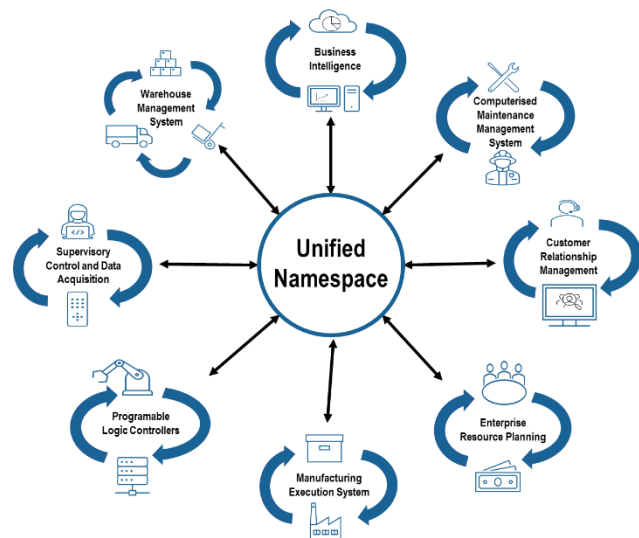Tech Note
Unified Namespace (UNS)

Background

A unified namespace is intended to be the 'single source of truth' for an organisation's production data and is a key component of network architectures which make the most of the Industry 4.0 concept. Manufacturers who implement a unified namespace build networks in a hub and spoke layout providing all major systems a direct link to the unified namespace.

Key Technologies

The unified namespace, or central repository, is the hub of an organisation's networks. It features details of every data point in the organisation and all information passses through it. Software providing this service is commonly referred to as a 'data broker'.

Network architectures which utilise a unified namespace don't conform to the traditional Purdue Enterprise Reference Architecture, the standard model for company networks since the 1990's.

The success of this approach relies on lighteight 'report by exception' communication protocols (e.g. MQTT). This ensures the data broker(s) which making up the unified namespace can handle the huge amount of data flowing through them and minimises loading on 'satellite' systems.

Benefits

Reduced system and network complexity – Maximum of 2 connections between any two systems.

Scalable architecture which supports digitalisation – Minimises cost of future modification, expansion or integration. Reduces cost of experimentation, proof of concepts and improvements projects.

Lower integration costs – Addition of new systems or data points simplied with changes only required to a single connection.

Supports OT/IT convergence – Having a centralised and shared resource necessitates teams responsible for operational and information technology to work effectively together.

Removes need for system knowledge – Object-orientated/contextualised approach allows creation of digital twins. Enables people with little or even no knowledge of operational technology will be able to navigate and use data from the UNS.

Standard presentation for data from different providers – Plant or equipment with the same functions from different suppliers can be presented in a uniform and consistent manner.

More Information

For more information follow the link below to the **Services** section of our website where you can learn more about the help we can offer on this topic and many others relating to industrial process and manufacturing automation.

https://op-tec.co.uk/services