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Backhaul Architecture Model: Secured Connectivity over Untrusted or Trusted Networks

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Contents

1 Scope

1.1 General

This document presents an architecture model for interconnecting automation system elements over untrusted backhaul networks. The focus is on wireless physical layer but is not limited to wireless.

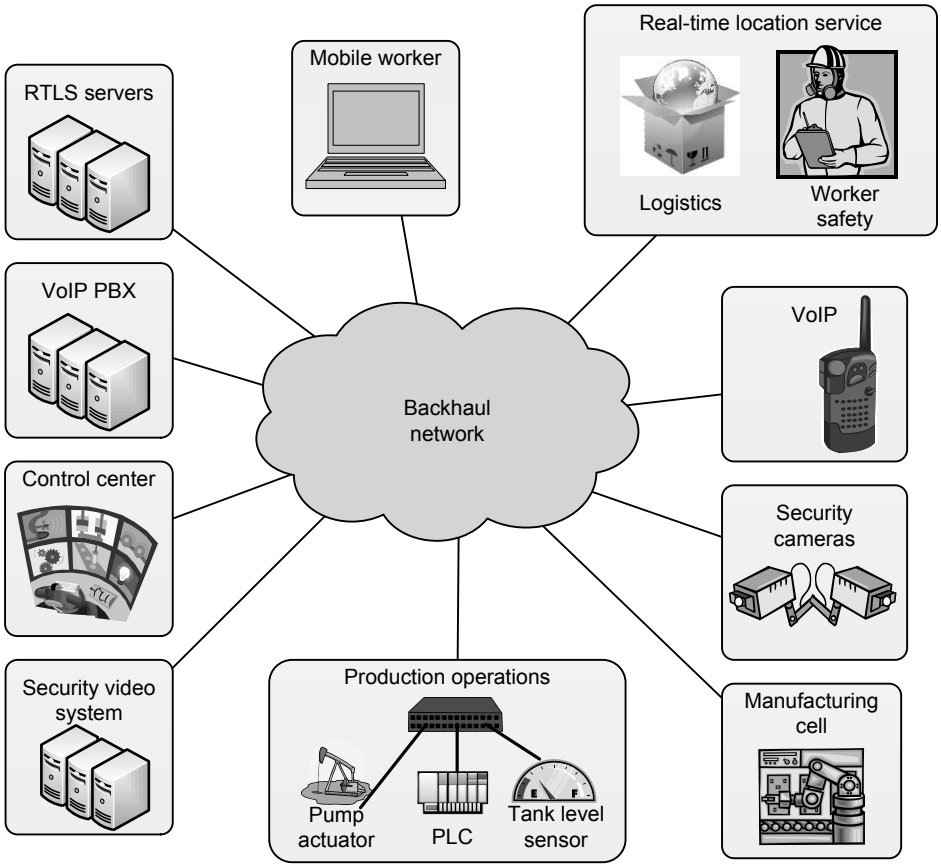

Figure 1 — Example applications using a shared backhaul network

Figure 1 provides an example of the variety of (potentially simultaneous) uses for backhaul networks. In this example, the “Backhaul Network” cloud could represent a short-distance network such as the user-owned network within a building or site, or it could represent a potentially heterogeneous long-distance network (for example, satellite or cellular communication networks) that are provided as a service effectively by multiple third parties. These backhaul links may be provided by one or more commercial providers such as satellite communications providers, cellular, LTE (see Clause 3), WiMax data services, etc. Alternatively, the backhaul may also be provided by the user—for example, Wi-Fi services, point-to-point microwave links, etc.

1.2 Wireless vs. wired backhaul networks

There is nothing in this architecture that precludes the use of wired network technologies (for example, Ethernet) for backhaul networks.