TETRA Connectivity Server (TCS)

Integrated applications boost efficiency

Special, tailored applications can bring even more benefits than the seamless TETRA system from Airbus can deliver on its own.
Developing applications that work well within a system requires well-documented interfaces. In TETRA systems from Airbus, these interfaces are open as well. It is therefore quick and easy to integrate third-party applications into the system.
The TETRA Connectivity Server (TCS) is the high-level interface for the secure and efficient integration of applications.
The TCS can offer the following possibilities for integrating third-party applications:
• Use the TCS for integrating new or existing applications and systems into the TETRA system. For example, command and control systems can be integrated via TCS.

• Implement specific applications, such as positioning solutions or telemetry systems.
• Improve the efficiency of operations. For example, an app can use short messages to do database queries. People in the field could use the app instead of asking a dispatcher to run the query for them.
Airbus offers advanced services for application developers through the TWISP partnership program, which helps developers in topics related to integrating third-party applications into Airbus TETRA systems.

Support for Windows Server 2016 Standard for TCS
Support for the Windows Server 2016 Standard (64 bit) operating system has been added for the TETRA Connectivity Server (TCS).

Note that the following options are not supported:
• Web Service interface (WSiF)
• DCOM
• EMT v1
• DAT tape drive

Support for Windows 10 OS for TCS clients
Support for the Windows 10 Enterprise LTSB (64-bit) operating system has been added for TCS configurations.

For more information, see the TCS Product Description (DN0116031), Installing the TCS (DN0116043) and Commissioning the TCS (DN0116764).

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TETRA Connectivity Server, TCS

The Airbus TETRA Connectivity Server can be delivered pre-installed in an industry standard PC or server, or as a software license delivery.

The TETRA system from Airbus offers two types of interface:
- TCS API is a full-featured programming interface
- Web Services Interface (WSIf) is a simple and efficient interface for data and messaging applications

The connection between the TCS and a remote client application may be via TCS IP Socket over TCP/IP or Web Service Interface. IP Socket is the preferred interfacing method between client applications and the TCS API. The WSIf can be used to build connection on open HTTPS, SOAP and XML standards efficiently speeding up the development of the data applications.

Characteristics
- TCS client capacity options:
  - TCS Single-user: 1
  - TCS Multi-user: 3/8/18/40 Typically, one active client application requires one TCS client license.

- TCS software options:
  - Status and Data Services (SDS 1…4, SDS-TL)
  - Voice services
  - Group membership management
  - Provisioning
  - End-to-end encryption
  - WSIf (3/8 clients)

TCS Single-user
TCS Single-user provides access to the TCS API services for one client application. The client application is installed in the same PC environment with the TCS software. The connection to the TETRA system is typically made with an E1 link which can be used in this case for both data and audio communication.

The main TCS Single-user hardware components:
- PC with Microsoft Windows 7 Ultimate or Professional operating system recommended
- Xgear16 multi-interface card: obligatory to handle E1 link in third party dispatch position
- External audio card: needed to connect audio accessories

TCS Multi-user
TCS Multi-user provides various TCS API services to multiple client applications simultaneously. A TCS Multi-user is always installed on a dedicated server PC, while all client applications are located remotely in separate PC hardware. Data communication between the client applications and a TCS Multi-user takes place over TCP/IP.

Recommended configuration for TCS Multi-user server machine:
- Microsoft Windows Server 2016
- HP ProLiant DL380 G10

Linux API
Linux based TCS API version is available with Rel. 7 and later. Linux API functionality is currently limited to SDS messaging only. Depending on the market, Linux API may be extended later.

Due to the library nature of the API, there is no daemon process running on the application server. All communication to the TCS Server is directly from the client application process.

Linux API supports subset of TCS API functionality.

TETRA Voice Gateway and integrated Linux TCS features
From TETRA Voice Gateway 8.0 onwards the TVG deliveries include a Linux TCS Multi-User, which co-locates on the same server with the TETRA Voice Gateway. Thus it is no longer necessary to have separate TCS hardware.

The Linux TCS Multi-User takes care of signalling part of the communications and provides a signalling interface (TCS API) towards the TCS clients. It offers similar services as the TCS Multi-User installed on a separate TETRA Connectivity Server.

Note that it is still possible to use a separate TCS server or a combination of an integrated Linux TCS and TCS server hardware in the network.

Note: The Linux TCS does not support the TCS Web Service Interface (WSIf), which is a TCS client connectivity option allowing 3rd party applications to manage data (SDS and status) and subscriber tracking through XML messages.

TCS client application
The TWISP program for application developers offers a wide range of commercial and technical services for the design, development, test and promotion of third-party applications.

For more information on TWISP, please email twisp@airbus.com