

Description

The Element Control Software Platform (ECSP) is a tried and tested, OMG compliant, real-time object-oriented C++ network management framework that provides a base for the development of a complete Network Element (NE) management solution.

The platform has been developed for use in telecommunications management network (TMN) but can be applied to any device requiring real time supervisory, control or data acquisition facilities. It can be event or timing driven and hence ideal for embedded applications as it uses less resource and power than a system that continuously interrogates the network elements.

The platform comprises a collection of software components that can be re-used to create a new, element specific, control platform. It provides a framework for managing tasks such as general purpose input/output, protocol handling, event handling and logging services.

The ECSP communicates with external clients via a **common API**. Currently four industry stand interfaces are available: **CORBA, SNMP, OPC and HTTP**.

Should your system not require all the capabilities of the ECSP or requires a different communication standard to the current four then a customisation service is available to create a bespoke version of the platform to meet your particular requirements.

This software has been implemented in telecoms environments but can be adapted to manage any network-based products. The ECSP can be ported to any hardware architecture and run on any POSIX-based operating system such as QNX, Linux and Solaris.

The ECSP can sit locally to the Network Element and communicate over a CAN bus, Modbus or plcbus. If the ECSP is remote from the appliances it's controlling such as a network of CCTVs, STBs or traffic lights then it can communicate using TCP/IP.



VHL Façade

The Virtual Hardware Layer (VHL) façade provides a unified interface at the VHL boundary and provides a simple default view of the of the VHL service layer. It defines a higher-level interface that makes the subsystems easier to use and hands off the service requests to the appropriate sub-system objects without you needing to know the internal architecture of the VHL.

ECSP Event Notification Service

The OMG compliant, Notification Service is a service which extends the existing OMG Event Service. Responsible for raising and receiving event notifications on any single Element Processor Unit (EPU) or Communications Processor Unit (CPU) in a distributed system.

ECSP Event Logger Service

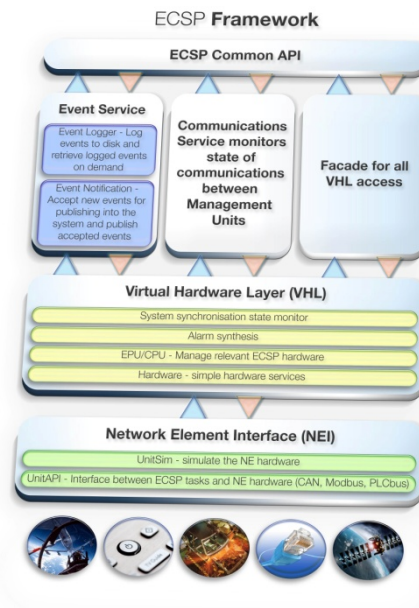
The OMG compliant, Log Service provides the necessary services for logging ECSP events to hard store.

ECSP Naming Service

The OMG compliant, naming Service resolves ECSP object names allowing applications to identify objects without the need to know their location or reference.

Communication Service

The **Communication Service** monitors and reports the state of communication with the network element. It generates events and dispatches them to the event notification task for processing.



ECSP Virtual Hardware Layer

The role of the VHL is to provide a virtual layer between the NE hardware and the rest of the ECSP and includes the following responsibilities:

- Model NE hardware;
- Notify ECSP of hardware alarms and events;
- Synchronise hardware with ECSP;
- Support both low-level and high-level operations;
- Maintain current alarm status; and
- Co-ordinate complex requests, such as cross-connects, protection etc.

Network Element Interface

The NEI acts as an interface between the ECSP tasks and the NE hardware. It provides the capability of simulating the network element in the absence of actual hardware, allowing for parallel software and hardware development.

Key Features

- Real-time object-oriented C++ network management framework
- CORBA, SNMP, OPC or http interface to external clients
- OMG compliant Notifying, Logging and Naming services
- Monitors state of communications between management boards
- Virtual Hardware Layer for managing the ECSP hardware
- Network Element Layer acts as the interface between the ECSP tasks and the NE hardware.

Benefits

- **Tried and tested** real-time network management platform
- **Written in C++ and UML** using Rational Rose visual modelling tool
- **Modular system** enabling sub-system implementation and code re-use
- **Full source code** to adapt for various Network systems such as SNMP-based.
- **Flexible platform** that can be ported to any architecture.
- **Virtual Hardware Layer** handles lower-level hardware interfacing
- **Prioritised alarm synthesis** for passing alarms through quicker based on priority
- **Simple** tailoring with a configuration file to meet your needs
- **Runs on any POSIX-base RTOS**
- **Event or time-driven system**
- **Low memory footprint**

Customisation

The ECSP source code is available for modification in-house. However, customisation of the platform, to meet specific requirements and hardware platforms, is available.

CORBA

The Common Object Request Broker Architecture (CORBA) is an architecture and specification for creating and managing distributed program objects in a network. It allows distributed objects at different locations, developed by different vendors, on different hardware, to communicate in a network through an 'interface broker'. CORBA was developed a consortium of vendors through the Object Management Group (OMG).

As-well-as telecommunications, CORBA is a well established technology in sectors such as, mil/aero, industrial, financial and software defined radio.

SNMP

The Simple Network Management Protocol forms part of the Internet Protocol Suite and is part of the Internet network management architecture. Typical applications are VIOP, storage, smart metering, STBs, DVRs and other digital media.

OPC

The OLE (Object-Linking and Embedding) for Process Control is an open standards specification that defines a set of objects, interfaces and methods for use in process control and manufacturing automation applications.

HTTP

There is a straightforward http-based API which allows a simple connection from any web browser.

Availability

The software product is available in the following forms:

- UML (Rational Rose) and C++ source code
- Extensive technical documentation
- Customisation service and technical support

Contact Details

Call +44(0)870 950 3048
Email: info@pss-networks.com
URL: www.pss-networks.com