EV_net_

Experimentation and
Verification Network

Contact

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What is EV*net* ?

EV*net* is a near real-time network based on modular configurable and adaptable hardware and software components. EV*net* is considered as a R&D infrastructure to complement the functionality, performance, verification and operation of existing and future GNSS systems.

What are the Capabilities ?

EV*net* is developed as an infrastructure component for the reception and distribution of any kind of GNSS data to EV*net* user community over the Internet. The main functionality is to acquire and process GNSS signals as well as corresponding environmental information. The network structure of the EV*net* implies the possibility to provide these data to internal and external users of the network by specific services. Depending on the user requirements the EV*net* also provides the capability to deliver higher level processing products that can be derived from the network data. These can be used within the scope of GNSS signal and system quality assessment to determine the reliability and integrity of satellite based navigation systems in local regions. Accordingly, the generic EV*net* already comes with features addressing the development of local elements to support location based services. Furthermore, the open hardware and software architecture of the EV*net* enables to support engineers involved in the design and development of new navigation applications and equipment up to the creation of user-specific services. Last but not least the access to a web-based data archive provides an opportunity for statistical long term analyses.
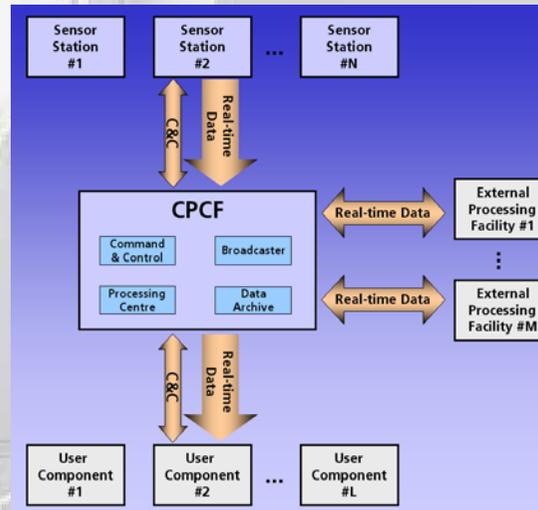
Block diagram of EV*net* architecture
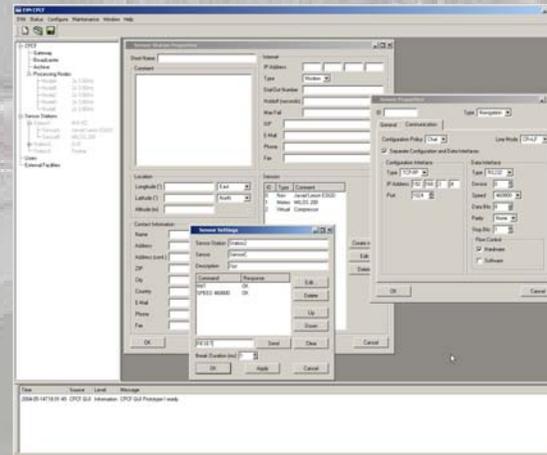
CPCF Graphical Operator Interface

Architecture and Design

- ✓ up to 50 monitoring stations
- ✓ central processing and control facility (CPCF)
- ✓ connection via TCP/IP (Internet, SSH)
- ✓ generic SW modules for various user clients
- ✓ platform independent system (LINUX, Windows)
- ✓ modular extensible system design

What are the main Features ?

- ✓ complete system monitoring and control from CPCF and remote sites
- ✓ multi-level operator and user authorisation
- ✓ easy on-the-fly integration of new components (sensors, stations, processors)
- ✓ supports up to 100 user components
- ✓ up to 1 Mbps per sensor data transfer rates
- ✓ near-real-time capability
- ✓ one year data archiving capacity
- ✓ network connectivity by LAN and/or ISDN/modem
- ✓ authentication and encryption via Secure Shell
- ✓ small and reliable software modules
- ✓ comes with generic API for the integration of user SW at CPCF and client level
- ✓ platform independent software design
- ✓ easy integration of EV*net* modules into user programs

Looking ahead

The EV*net* is considered to become a valuable tool for the development of satellite navigation applications and services, for the independent Galileo verification and development of Galileo Local Elements, for education, and the introduction of Galileo into the public.