EVnet Station Network

Current status of EVnet sensor station implementation (spring 2007)

DLR at a glance

DLR is Germany´s national research center for aeronautics and space. Its extensive research and development work is integrated into national and international cooperative ventures. As Germany´s space agency, DLR has been given responsibility for the forward planning and the implementation of the German space program by the German federal government as well as for the international representation of German interests. Furthermore, Germany's largest project-management agency is also part of DLR.

Approximately 5,100 people are employed in DLR´s 27 institutes and facilities at nine locations in Germany: Koeln-Porz (headquarters), Berlin-Adlershof, Bonn-Oberkassel, Braunschweig, Bremen, Goettingen, Lampoldshausen, Oberpfaffenhofen, and Stuttgart. DLR also operates offices in Brussels, Paris, and Washington, D.C.

Information

EVnet

Experimentation and
Verification Network

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What is EVnet ?

EVnet is a near real-time network based on modular configurable and adaptable hardware and software components. EVnet 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 ?

EVnet is developed as an infrastructure component for the reception and distribution of any kind of GNSS data to EVnet 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 EVnet implies the possibility to provide these data to internal and external users of the network by specific services. Depending on the user requirements the EVnet 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 EVnet already comes with features addressing the development of local elements to support location based services. Furthermore, the open hardware and software architecture of the EVnet 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.

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 EVnet modules into user programs
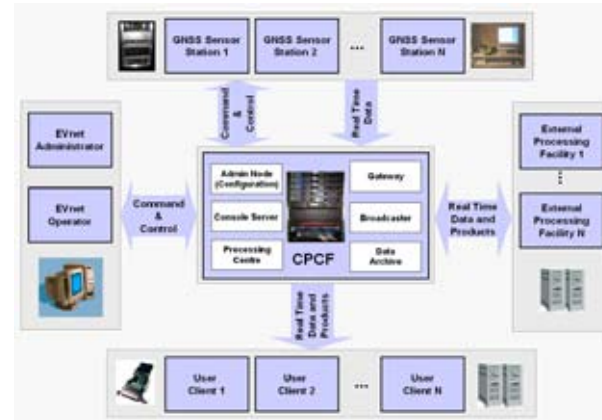
Architecture of EVnet components

Looking ahead

The EVnet 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.
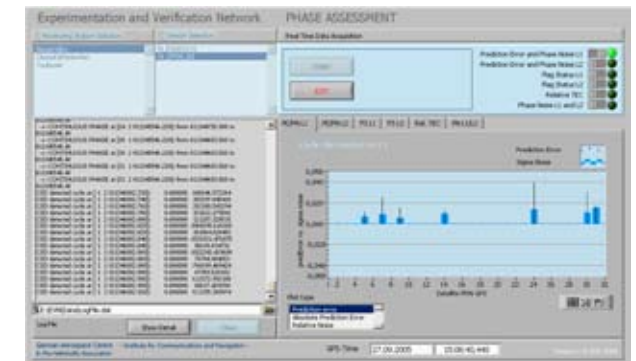
**Client application for SISA
(Signal in Space Assessment)**