

EGNOS Data Access Service Applications

<http://www.gsa.europa.eu/go/egnos/edas>



Plugging into EGNOS

A new service from EGNOS is now available! The European Geostationary Navigation Overlay Service (EGNOS) is essentially Europe's 'pre-GALILEO' system, its first concrete venture into satellite navigation. EGNOS delivers services based mainly on GPS signals, providing augmentation signals disseminated by geostationary satellites linked to a network of ground stations. EGNOS provides services via three EGNOS geostationary satellites: the Open Service, and EDAS, which provides ground-based access to EGNOS.



EGNOS now provides a terrestrial commercial data service

EDAS – the EGNOS Data Access Service – allows you to plug into EGNOS to receive the internal data collected, generated and delivered by Europe's first satellite navigation system. EDAS therefore provides an opportunity for service providers to deliver EGNOS data to users who cannot always view the EGNOS satellites (such as in urban canyons), or to support a variety of other services, applications and research programmes.

EDAS provides a formatted data feed from EGNOS through a ground based transmission network. The EDAS data can then be built upon either to form new innovative services or to be integrated into existing services. Ultimately, it is envisaged EDAS will add value to a range of multimodal applications, including location-based services (LBS), Assisted-GNSS (A-GNSS) concepts, a broad range of services in professional GNSS markets, and related R&D activities.

Why EDAS?

EDAS builds on the qualities of EGNOS to provide a reliable high level of service to users. EDAS offers the following key advantages.

Reliability and assurance: EGNOS will be a certified Safety-of-Life system requiring a highly reliable and resilient infrastructure. This infrastructure is the basis for EDAS.

Data delivery: EGNOS data is provided in real-time through a standard internet connection or via a direct fixed line.

Data content: EDAS not only provides EGNOS broadcast data, but also raw data from Ranging and Integrity Monitoring Stations (RIMS) and satellite status messages.

European and North African coverage: EDAS data is sourced from 34 EGNOS RIMS generating unique Global Navigation Satellite System (GNSS) datasets from Europe and North Africa

Commercial contracts: In the future, it is planned that EDAS can be provided to service providers on a long-term basis with reliable performance levels.

Signing up for EDAS

Signing up for free is simple. Just go to <http://www.gsa.europa.eu/go/egnos/edas> and follow the instructions under the menu «how do I access EDAS». From there you can fill in a simple application form to be sent via email. You will then receive configuration and login details, the client software and other useful information.

EDAS applications

In this information package we provide descriptions of some examples of applications that could be developed from EDAS by service providers.

This information package is complemented by a separate package outlining how to access EDAS and how you can sign up for the service. This sign up information, a list of FAQ's and the EDAS Help Desk can be accessed at <http://www.gsa.europa.eu/go/egnos/edas>. If you have any questions not addressed by our information packages, please contact us at edas@gsa.europa.eu.

Data Available from EDAS

Service providers can access EDAS to form new innovative applications, to integrate into existing services, or to support research programmes. These uses exploit the different types of the data available from EDAS.

The EGNOS infrastructure is composed of monitoring stations (currently 34), most of which are located in Europe and North Africa. This infrastructure is used to supply the main types of data provided by EDAS:

- The raw GPS, GLONASS and EGNOS geo observations and navigation data collected by the entire network of Ranging and Integrity Monitoring Stations (RIMS) and Navigation Land Earth Stations (NLES).
- The EGNOS augmentation messages, as normally received by users via the EGNOS geostationary satellites.

In addition, EDAS provides the Antenna Phase Centre Coordinates, which is a list of the geographical coordinates of all RIMS stations.



Application areas

There are a wide range of opportunities to harness EDAS in support of a range of applications and services, including the following:

Redistribution of EGNOS messages

A-GNSS for location-based services

Professional GNSS services

...And more, including performance monitoring and research

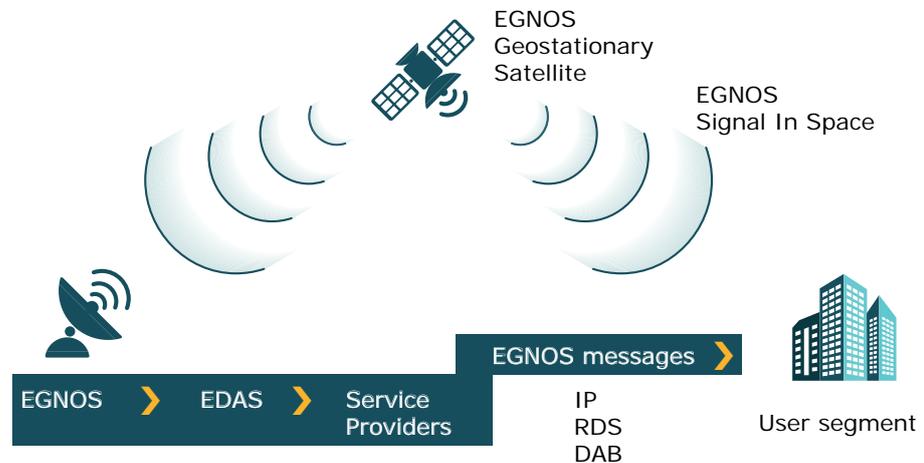
These example applications which EDAS could help support are described in following sections.

Redistribution of EGNOS augmentation messages

EGNOS augmentation messages are provided to users by three EGNOS geostationary satellites. To receive the EGNOS augmentation messages users must maintain visibility with at least one geostationary satellite.

However, for some users the visibility of EGNOS satellites is restricted, such as in urban canyons. In other cases, supplying the EGNOS augmentation in a different format may be beneficial to user communities in line with their own equipment standards. To address these requirements EGNOS augmentation messages could be distributed by service providers through a variety of channels:

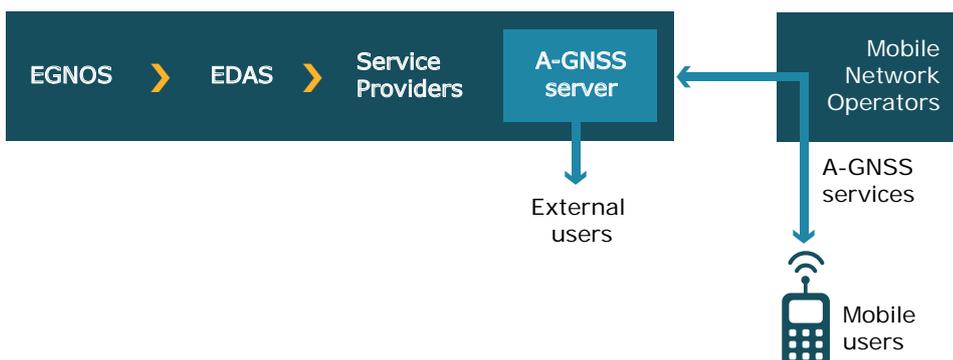
- Internet Protocol (IP)
- Radio Data System (RDS) communication protocol standard
- Digital Audio Broadcast (DAB) communication protocol standard
- Using EGNOS pseudolites, where the EGNOS Signal-in-Space would be repeated from fixed transmitters providing both the augmentation messages and ranging signals.



A-GNSS for location-based services

A-GNSS services enable mobile phones on operators' networks to more quickly obtain a position from GNSS signals along with greater accuracy. In urban areas A-GNSS is widely seen as essential for successful location-based services. A-GNSS services are provided by mobile network operators themselves or by third parties. An A-GNSS service is provided using a server to process raw GNSS signals from mobile phone users and sends back (over the network) the position. These processes use processed data from networks of reference stations (i.e. GNSS receivers). A-GNSS providers could also send, when permitted, the position information of mobile phones on to other parties, such as emergency services (e.g. E-112).

EDAS raw RIMS data can be used as a data input into the processes supporting current or future A-GNSS services to network operators.



Professional GNSS services

High accuracy GNSS based services today serve a wide range of users in the professional GNSS market. These include users within surveying, oil and gas exploration, mapping, construction, tracking and more.

Today's solutions rely on networks of GNSS receivers to support high accuracy services. These data sets are used in processes to deliver Differential GNSS (DGNSS) and Real Time Kinematic (RTK) services – including wide-area and network solutions.

The raw GNSS receiver data from the RIMS network provided by EDAS can be used to support a range of high accuracy GNSS solutions. Today, these are supplied by commercial service and equipment providers. EDAS gives service and equipment providers opportunities to exploit data from the EGNOS RIMS network to enhance existing services or build new offerings.

Once EDAS has been integrated and processed by a service provider, it may be delivered to users through many of the channels used today – GSM, internet, and satcoms.



... and more

A-GNSS, professional GNSS services and redistributed EGNOS messages are just some of the possible applications for EDAS. A selection of other EDAS applications includes:

Supporting an EGNOS performance monitoring facility to serve EGNOS user communities.

Supporting geodetic and mapping research.

Potential reconstruction of the EGNOS augmentation message distributed to users – this could allow tailoring the augmentation messages for the urban environment.

For more information:

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