EGNOS Receivers Technical Workshop
Paris – 3rd July 2003

User support available from EGNOS Project Office

Presented by Cristoforo Montefusco

User support and public relation activities :

- ESTB Workshops
- ESTB/EGNOS Papers
- ESTB/EGNOS Demonstrations
- ESTB Helpdesk Service
- ESTB/EGNOS Web Site
- ESTB/EGNOS Newsletter
- ESTB/EGNOS/SISNET FAQ
- EGNOS Fact Sheets
- EGNOS Receivers available on the market
- EGNOS CD-ROM
- EGNOS Leaflet

Three ESTB Workshops (Toulouse, Nice) already took place with the aims of:

Let all interested parties familiarise with ESTB in view of future EGNOS utilisation and operation

Sharing information on measures and trials made using the early EGNOS signals

Informing interested parties on how to make use of ESTB signals for the development of their specific applications

Promote the exchange of information with GNSS system designers after the users feedback

A lot of papers have been presented at international conferences:

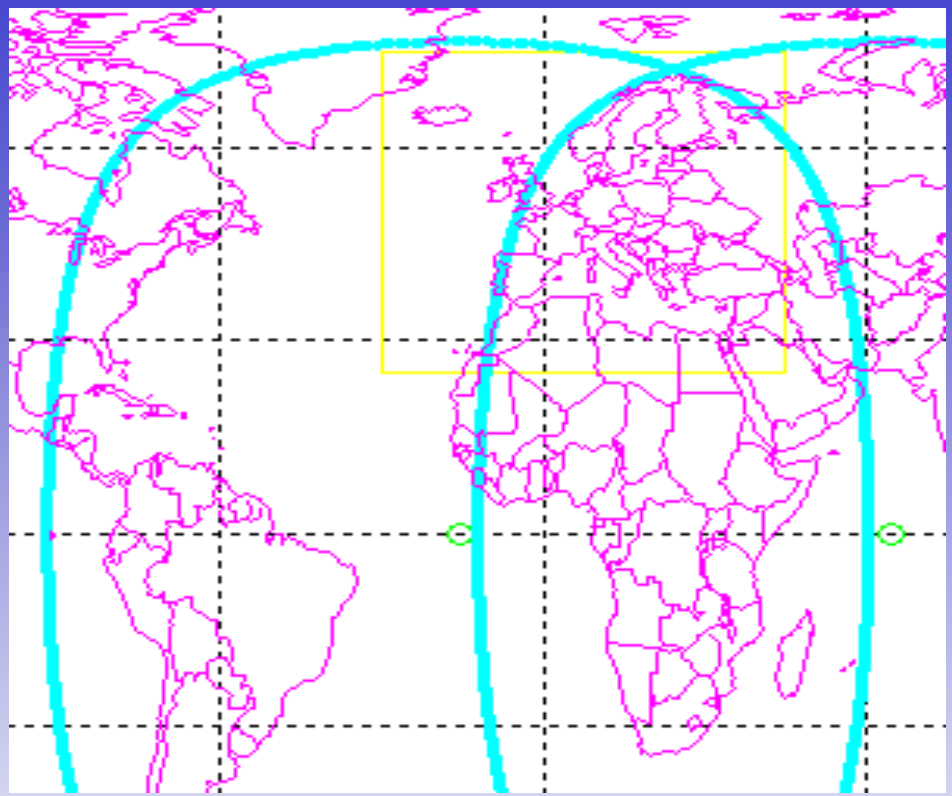
ESTB Workshops
GNSS Conferences
ION Meetings
IAIN Conferences
Others events

They are available for download in the ESA web site publication section:

http://esamultimedia.esa.int/docs/egnos/estb/publications.htm

ESTB/EGNOS/SISNET demonstrations have already taken place in various Countries:

- Flight trials
- Maritime navigation trials
- Car navigation trials
- Urban transportation
- Railway trials
- Precision farming
- Blind pedestrian navigation
- EGNOS terrestrial Regional Augmentation Network



Information is available in the ESTB web site and in the periodical EGNOS newsletter

ESTB/EGNOS Helpdesk 1

The ESTB/EGNOS Helpdesk aims to create an interface with the users giving answers on the following main issues:

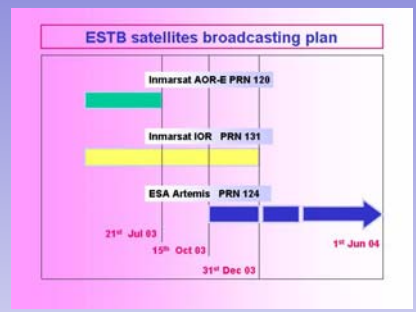
General ESTB / EGNOS questions
System performances
System technical issues
System operational issues
Receiver issues
SISNET issues
Request of promo-demo-trials

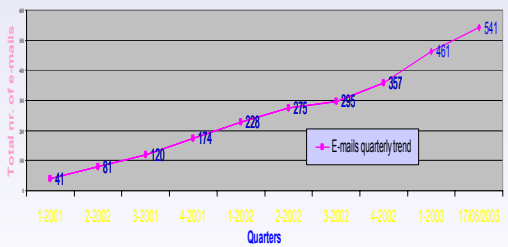
The Helpdesk address is:
ESTB@ESA.INT

ESTB/EGNOS Helpdesk 2

The ESTB/EGNOS Helpdesk is also supporting the preparation and dissemination of information material

ESTB/EGNOS web site update
Technical notes / papers
EGNOS newsletter
Support in public events
Statistics
Technical surveys
FAQ

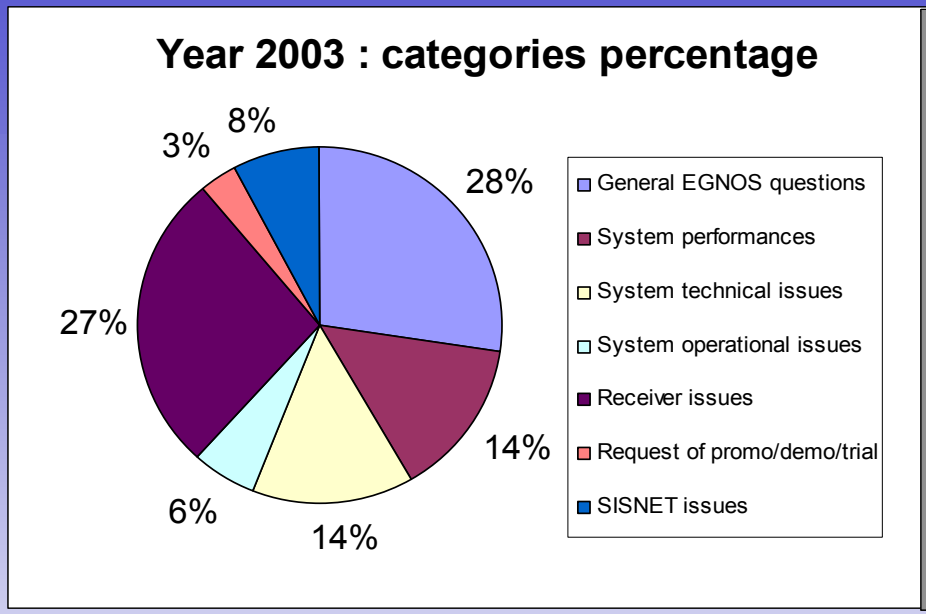




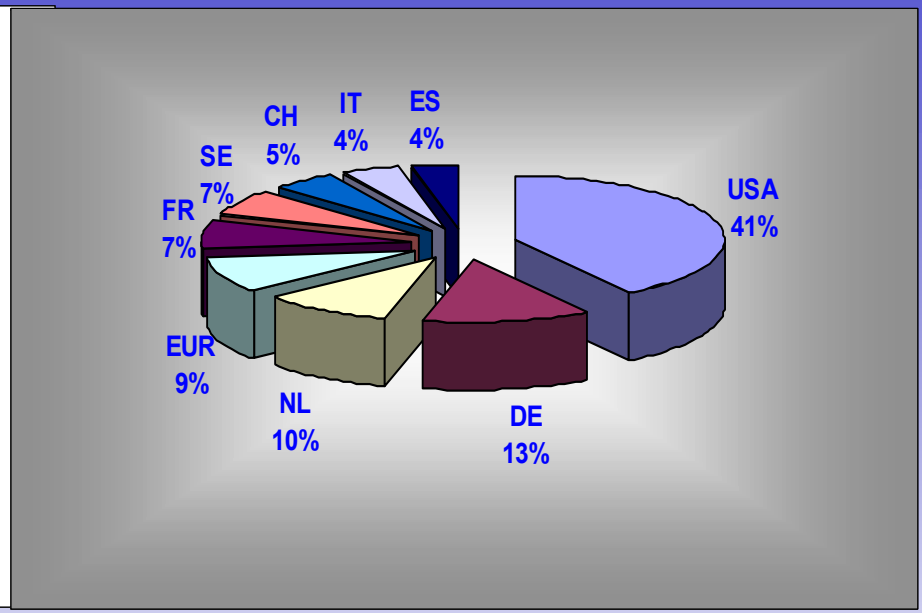
ESA ESTB/EGNOS relevant web sites

ESA Navigation Web Page: www.esa.int/navigation
ESA EGNOS Web Page: www.esa.int/egnos
ESA ESTB Web Page: www.esa.int/estb
ESA SISNET Web Page: www.esa.int/sisnet

Relevant ESTB/EGNOS statistics



Frequent questions



Geographical distribution of visits to our web site

Link from your web site to www.esa.int/egnos

EGNOS NEWSLETTER

EGNOS News is aimed at all potential EGNOS users as well as anyone else with an interest in state-of-the-art of satellite navigation. It reports on all the latest information and results from ESTB trials which demonstrate the remarkable performance offered by Satellite Based Augmentation Systems such as EGNOS. It also contains web links and information to keep readers up to date with news and events concerning the EGNOS/ESTB system. To subscribe please send an e-mail to: ESTB-News@esa.int

More than 2000 subscribers

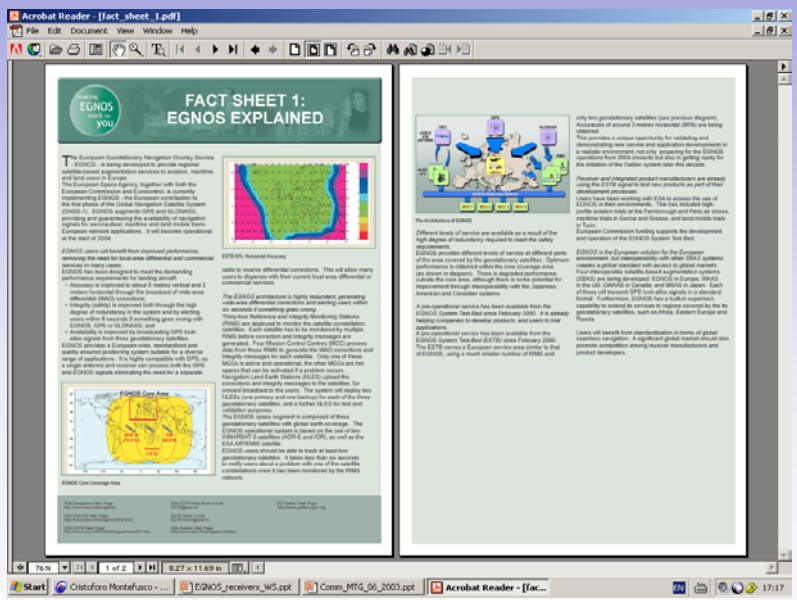
ESTB/EGNOS/SISNET FAQ

Frequently Asked Questions covering various subjects concerning ESTB, EGNOS and SISNET are available at:

http://esamultimedia.esa.int/docs/egnos/estb/ESTB_FAQ.pdf

and

http://esamultimedia.esa.int/docs/egnos/estb/sisnet/faq-sisnet.htm



ESTB/EGNOS/SISNET Fact Sheets available both in the CD-ROM and in the web in the publications section

EGNOS receivers available on the market

At: http://esamultimedia.esa.int/docs/egnos/estb/SBAS_receivers.pdf
ESA publishes a list of currently available SBAS receivers (in alphabetical type order). It is intended to assist the EGNOS/ESTB users in their search for suitable receivers. The information has been collected by ESA on the internet and, can by no means considered to be complete nor correct on any detail. Users are advised to contact the individual manufacturers and distributors for complete data sheets.

Manufacturers not listed yet and manufacturers with more up-to-date information are kindly invited to contact the ESTB Helpdesk by email to estb@esa.int






EGNOS information material for end users 1

CD-ROM entitled: **Making EGNOS work for you**

It covers the subjects

- Why use satellite navigation?
- What is EGNOS?
- How does EGNOS work?
- So what are the benefits of EGNOS?

It is available for inclusion in the receivers user's documentation

Choosing EGNOS makes sense ... improved quality of service and performance for negligible cost

What will EGNOS do for me?

The choice today is between a GPS-only receiver and a GPS/EGNOS receiver.

If you choose GPS-only, you will have access to a satellite navigation system with a horizontal accuracy of about 7m. However, this varies with location and time, the coverage is unpredictable in urban and other challenging environments, and health information can be up to 2 hours late.

When you choose a GPS/EGNOS receiver, you gain access to a 1 metre differential service that is free of direct user charges, provides a better quality of service with a 6 second health warning and enhanced system availability. There are also associated economic and environmental benefits.

Choosing EGNOS makes sense.

jargon:

multimedia | fact sheets | links

about esa | jargon | help

esa

EGNOS information material for end users 2

Leaflet entitled:
EGNOS explained by The European Space Agency

It covers the subjects

- Why use satellite navigation?
- What is EGNOS?
- How does EGNOS work?
- So what are the benefits of EGNOS?

It is available for inclusion in the receivers user's documentation

EGNOS information material for end users 2

SBAS and EGNOS Explained

This leaflet has been produced by the European Space Agency to explain Satellite Based Augmentation Systems (SBAS), in general, and the European version, EGNOS, in particular. Now, you may be wondering why you need SBAS when there is GPS. This is because SBAS augments GPS and improves your positioning solution and enhances safety. That means that everything you have done before with GPS has just got better and is now much more achievable. Reading this leaflet gives you all the reasons for developing, choosing and using EGNOS. Moving on, you will hear about EGNOS and discover how it works. Finally, we will show you how others are using EGNOS to improve on GPS.

Why SBAS?

We all know that GPS has revolutionised navigation and positioning over the last two decades. Today, there are nearly 30 satellites that give us accurate positioning and timing worldwide and we can use these to give us positioning accuracies better than 10 meters and timing accuracies better than 30 nanoseconds.

So, why SBAS? Listening to users, it is clear that there are shortfalls with GPS: some need firm commitments about civil control; others need accuracy much better than GPS; and many need improved health warnings to support safety-critical applications.

SBAS does all this and more.

There are four SBASs being developed: EGNOS in Europe, GAGAN in India, MSAS in Japan and WAAS in the US. When operational, SBAS signals will be available globally. Other states and regions are also considering developing new systems or linking into these existing developments. These are all civil-controlled regional systems and there is a form of coordination to ensure that they are interoperable to provide a seamless worldwide navigation system so you can use one SBAS/GPS receiver for all of them.

Each SBAS provides GPS look-alike signals and GPS corrections to improve position accuracy to around 1 meter horizontal and 3 meters vertical. Timing accuracy is enhanced to better than 10 nanoseconds.

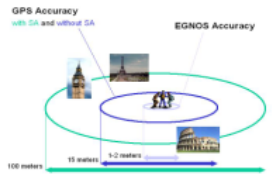
Today, when a GPS satellite malfunctions, you can wait as long as three hours for the satellite to be set unhealthy and in that time your position accuracy can be much worse than 100 meters. Each SBAS provides an integrity related message every six seconds to tell you when GPS malfunctions and to maintain performance. This is vitally important not only for safety critical users perhaps landing aircraft but also for anyone who needs accuracies better than 10 meters with a high level of confidence.

What is EGNOS?

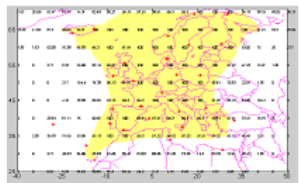
EGNOS, the European Geostationary Navigation Overlay Service, is the European SBAS and is being deployed to provide regional satellite based augmentation services to aviation, maritime and land users in Europe. EGNOS is the first step in the European Satellite Navigation strategy that leads to GALILEO, the future European satellite navigation system that will complement GPS.

We have designed EGNOS to meet the challenging performance requirements for landing aircraft meaning that it meets most users' requirements:

- *availability* is improved by broadcasting GPS look-alike signals from up to three geostationary satellites;
- *accuracy* is improved to between one and two meters horizontal and between three and five meters vertical 3-5 meters; and
- *integrity* or safety is improved by alerting users within 6 seconds if a malfunction occurs in EGNOS or GPS.



EGNOS provides a European-wide, standardised and quality-assured positioning system suitable for a wide range of applications. It also provides precise time with respect to UTC (Coordinated Universal Time) for time and frequency users. EGNOS is highly compatible with GPS so a single receiver can process both the GPS and EGNOS signals eliminating the need for a separate equipment to receive differentials corrections.



Expected EGNOS coverage for a high accuracy service (1 m-3m horizontal)

Conclusions

We all want EGNOS to be a success

We are happy for you to include our EGNOS publicity material with your receivers

Please do not hesitate to link to the EGNOS web site: www.esa.int/egnos

Help us to help you

estb@esa.int