EGNOS Data Access Service

The EGNOS Service to Provide Ground Based Access to EGNOS - EDAS Beta Test Findings

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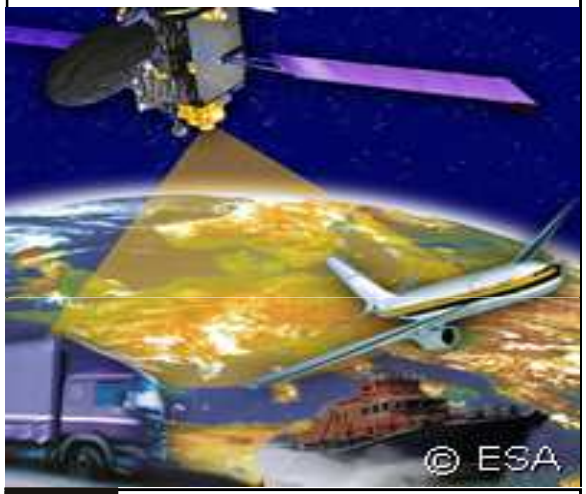
Plugging into EGNOS

The EDAS is the new ground based data service from EGNOS

EGNOS



OS and SoL: the space based services

EDAS

Ground based one-way connection to EGNOS

Service Providers

Applications & End Users

EDAS provides service providers with the opportunity to use EGNOS data to build innovative multimodal applications

EGNOS

GPS and GLONASS ground monitoring network

Generates augmentation messages

OS and SoL

Open and Safety-of-Life service will disseminate augmentation messages to users via three Geostationary satellites

EDAS

The EGNOS Data Access Service

EDAS is a new data service from EGNOS

OS and SoL

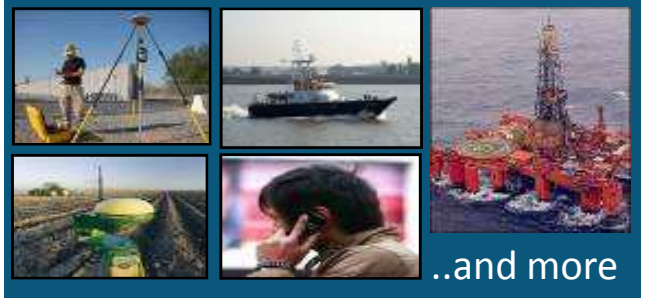
EDAS provides a ground based connection for accessing EGNOS data (not just the broadcast message) in real-time

Service Providers

Service Providers can sign-up to receive EDAS

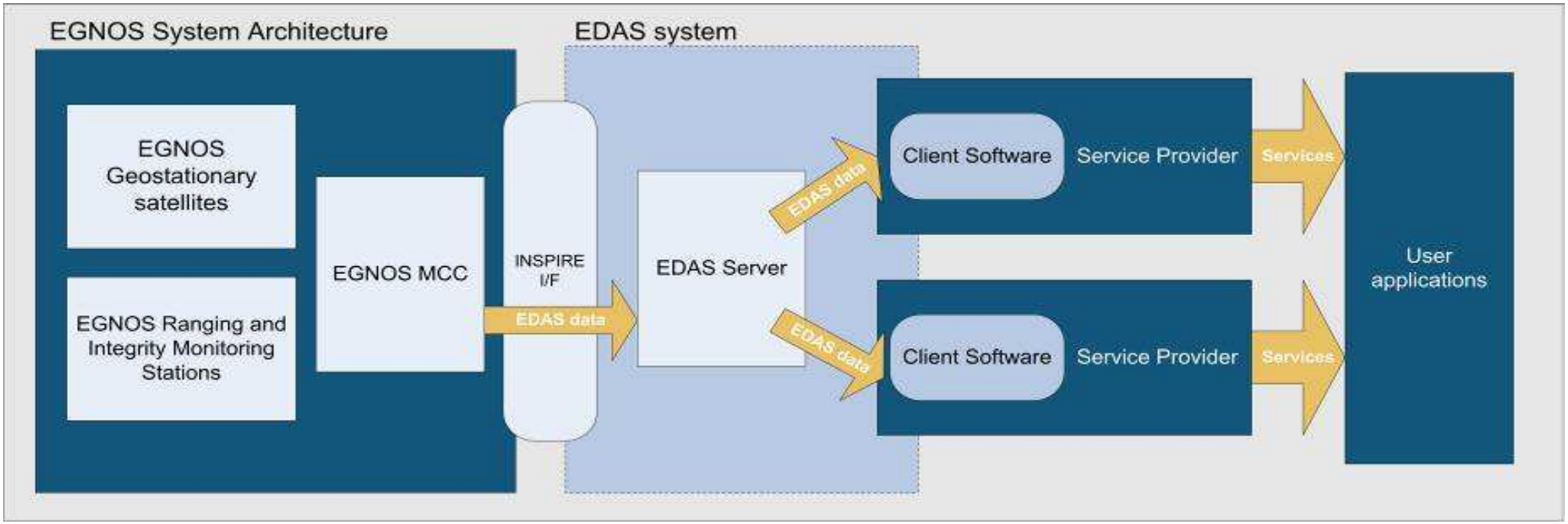
Delivering EDAS supported services & applications to users

Applications & Users



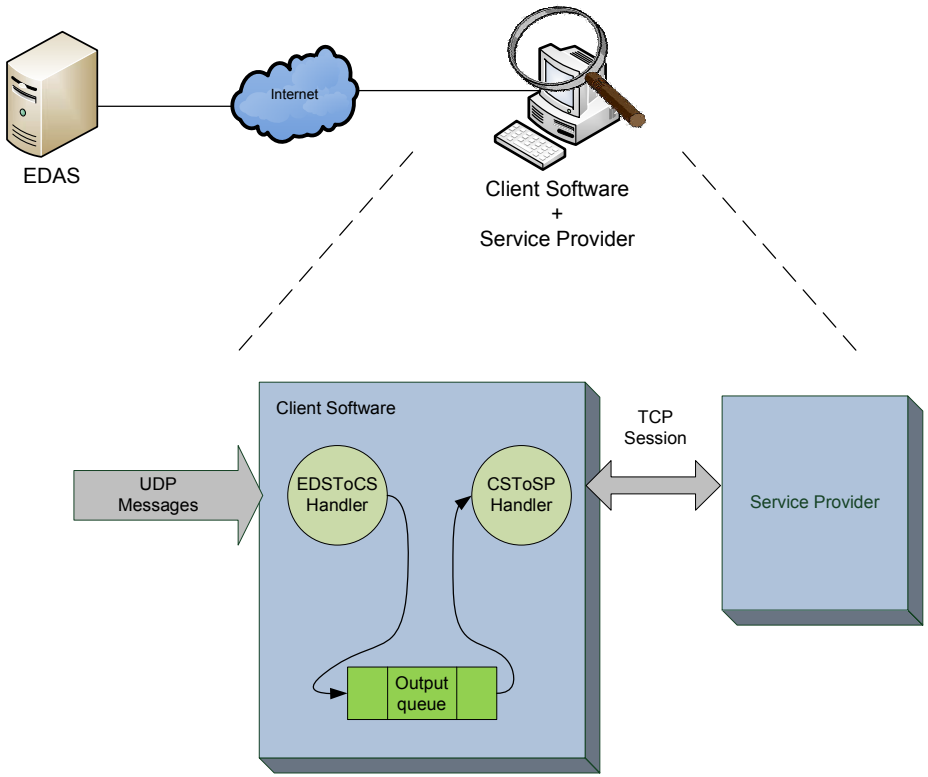
..and more

EDAS is the one way access point for plugging into EGNOS (1/2)



EDAS is the one way access point for plugging into EGNOS (2/2)

- SP access data through the EDAS Client Software (CS)
  - Manages user authentication
  - Provides EDAS data (SL0 or SL1) to the SP application
  - Monitoring & Control info (gaps, integrity, user quota)



Two EDAS service levels can be opted for

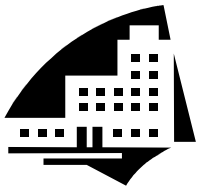
- Designed for High Availability of Service
- EGNOS RIMS raw measurements obtained from a dedicated interface (INSPIRE)
- Data converted and broadcast in two different Service Levels

	Service Level 0	Service Level 1
Format	ASN.1	RTCM 3.0
Data rate	600 kbit/sec	300 Kbit/sec
Maximum Latency(*)	150 msec	300 msec

(*) Latency measured at the output of the EDAS Server, thus not including delays in EDAS-SP connection (e.g xDSL). Average latency values measured are actually half of those in the table.

EDAS enables access to the data collected, generated and delivered by EGNOS for the Open and Safety-of-Life Services

EDAS Accessing data from EGNOS



Raw GPS, GLONASS and EGNOS GEO observations: *collected by the entire EGNOS network of Ranging and Integrity Monitoring Stations RIMS*

The EGNOS augmentation message*: as normally received by users via the EGNOS Geostationary satellites*

Antenna Phase Centre Coordinates: *list of the geographical coordinates of all RIMS stations*

EDAS Content

- *ASN.1 format*
- *RTCM format*
- *Receiving both formats is also possible*

EDAS format

EDAS provides a simple internet connection for most users but also offers the option for a faster fixed connection

- *Simply register and download the client software*
- *A standard ADSL internet connection is sufficient to receive EDAS*
  - *Service Level 0: ASN.1 format service requires 300 kb/s*
  - *Service Level 1: RTCM format service requires 600 kb/s*
  - *Option to receive both Service Levels*

AJGA2

Want increased and more assured performance? We will advise on installing a fixed line to EDAS

Slide 9

AJGA2 Delete this information if you keep the table in the slide I have created before!!!!!!!!!

A. Gavín, 09/09/2010

EDAS builds on the qualities of EGNOS to provide a reliable high level of service

Reliability and Assurance

EGNOS will be a certified Safety-of-Life system requiring a highly reliable and resilient infrastructure on which to base EDAS

Data Delivery

EGNOS data in real time through a standard internet connection or a fixed-line

Data Content

EDAS not only provides EGNOS broadcast data, but also:

- RIMS raw data
- Status messages

European and North African Coverage

The 34 EGNOS RIMS collect a unique GNSS dataset across Europe and North Africa

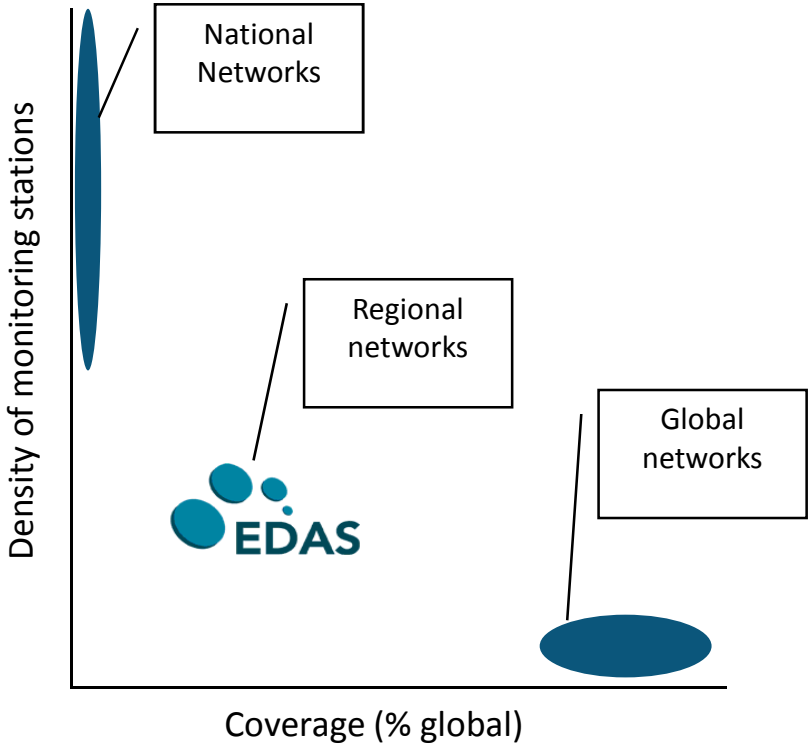
EDAS

Commercial

In the future, EDAS can be provided on a long-term basis with reliable performance levels

The GPS, GLONASS and EGNOS observables from the RIMS network provide a unique real-time data set

- Ranging and Integrity Monitoring Stations



EDAS adds value to existing services and can support innovative new applications

EDAS

Using the raw RIMS data

Redistributing the EGNOS messages

Harnessing the status messages

Some users will not be able to maintain visibility of EGNOS satellites, such as in urban canyons. EDAS could support:

EGNOS pseudolites (for SBAS and ranging)

Provision of EGNOS augmentation via other channels (DAB/RDS/IP)

EDAS RIMS raw data can provide a key part of the data source for:

A-GPS solutions for Location Based Services
Data supply for high accuracy professional GNSS services
Ionospheric monitoring
Analysis and simulation tools
Geodetic analysis
NOTAM services
EGNOS performance monitoring

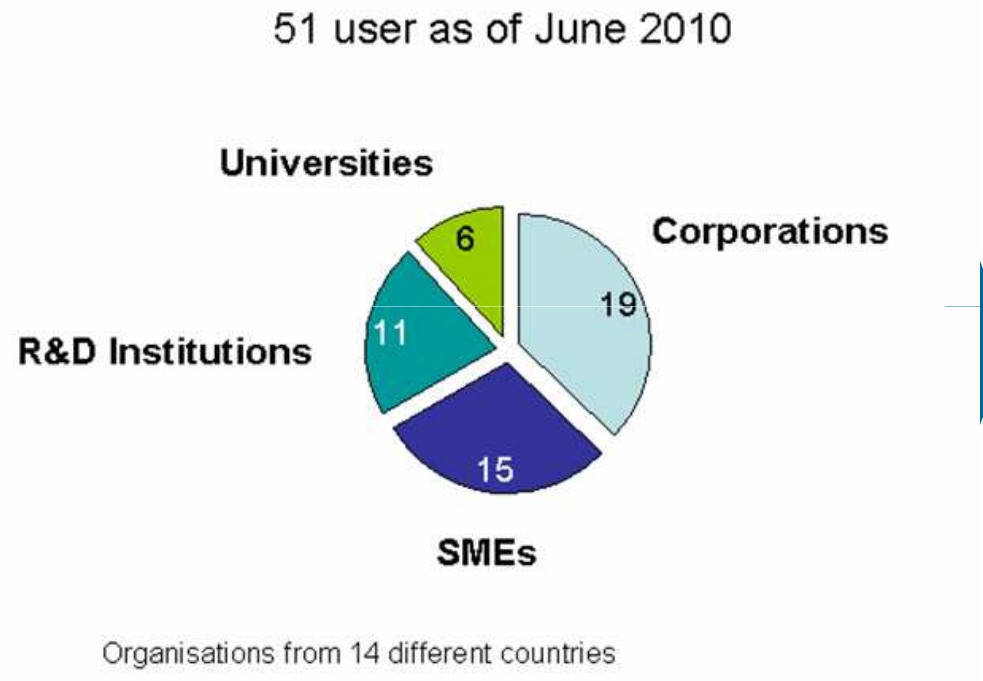
User feedback and behaviour are the basis for the go-to-market strategy

	Launch of beta test	Test reach & engage	Market study	Go-to-market approach
Roadmap				
Activities	• Set up of contractual framework, procurement & project plan • Initial target definition for test users	• Technical improvements • Optimisation of reach & engage processes • Preperation of 2nd wave	• Set-up of online feedback tool • Development of indepths interview guide • Conduction of 30+ indepths interviews	• Conduction of quantitative & qualitative evaluation of priority segments
Results	• Web-site live • Server & helpdesk set-up • Target test users invited and first inscriptions	• Connectivity process working, helpdesk up & running • ~30 test users by December 2009	• Report on user behaviour, satisfaction, requirements • EDAS added value and target markets identified • EDAS development roadmap drafted	• Target market described and priorities set

Objective

Successfully run beta test and draw conclusions for in market phase

EDAS is gaining market awareness with a continuous flow of new subscriptions



- **As of December 2009, 30 test users had subscribed to EDAS**
- **Organisations composed of companies, SME´s, research institutions as well as universities across Europe (including major European and global players in the GNSS industry)**
- **By beginning of June there were already more than 50 organisations using EDAS**

For feedback collection key users and downstream market players were interviewed in-depth

- 1st phase: 14 in-depth interviews with beta test users
- 2nd phase 17: in-depth interviews with players along value chain

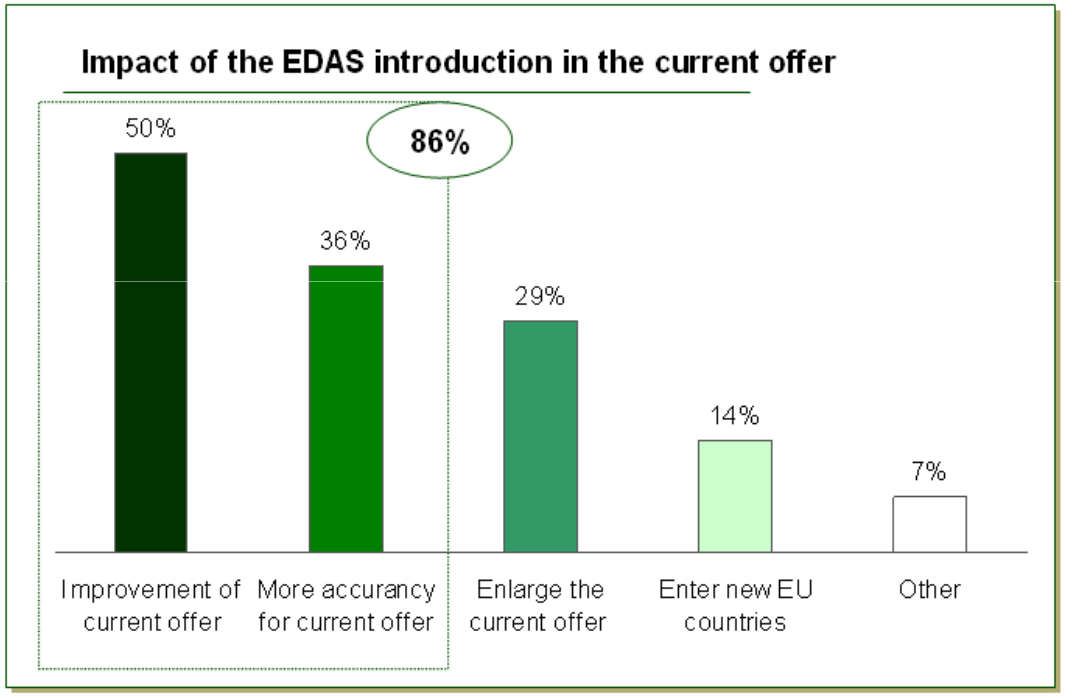
Insights repository of about 200 pages of structured interview information

Use	– Almost all the users in a data processing phase, testing the data and applications – Impact more in terms of an add-on to their actual offer rather than stand alone product
Satisfaction	– 86 percent of users satisfied with performance/ security/ helpdesk – Some suggestions made for format and a few for content
Needs	– Need for committment regarding future enhancement and reliable service

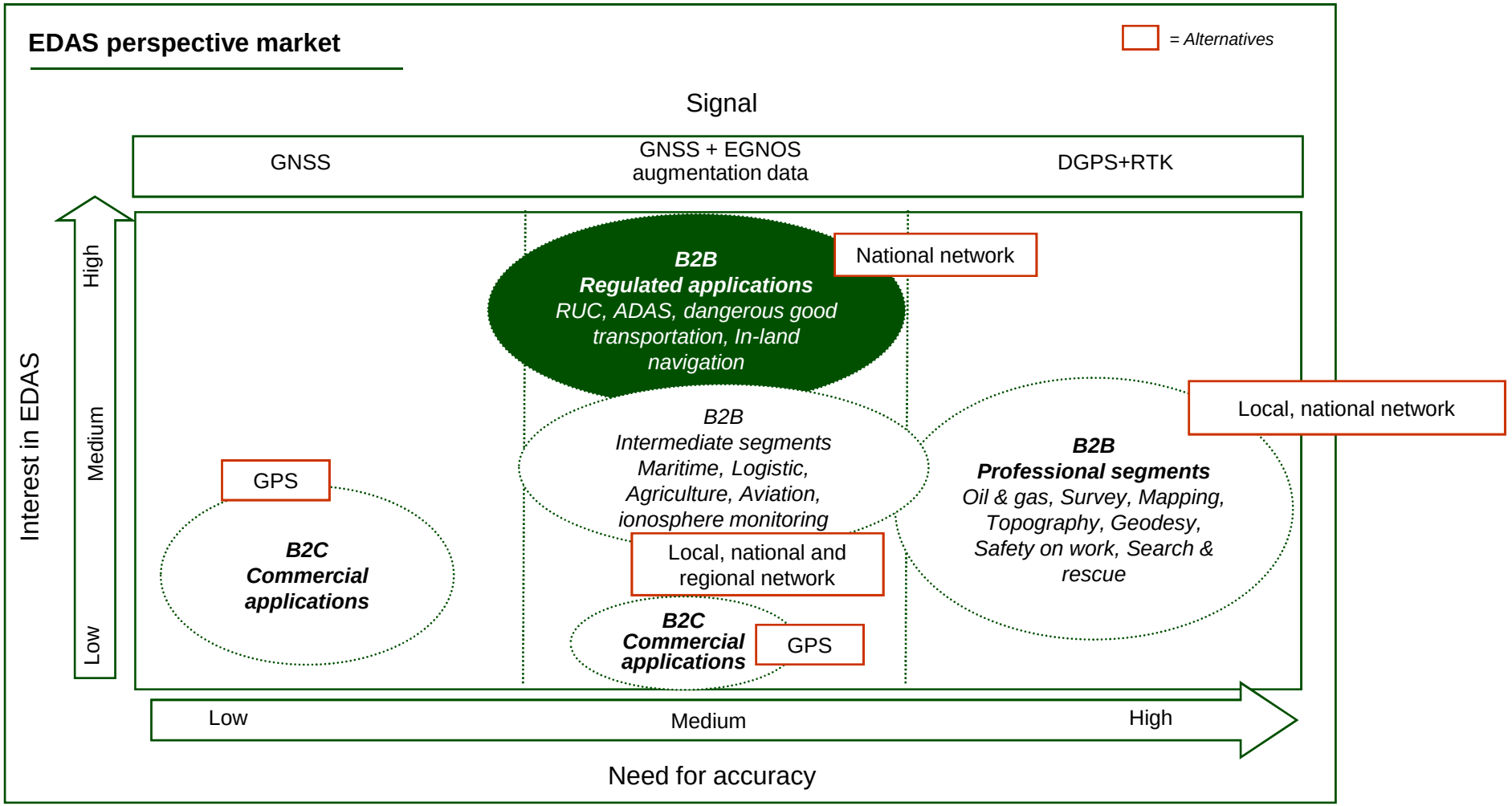
Added value will be used mainly in order to enhance an already existing service offer

Added-value

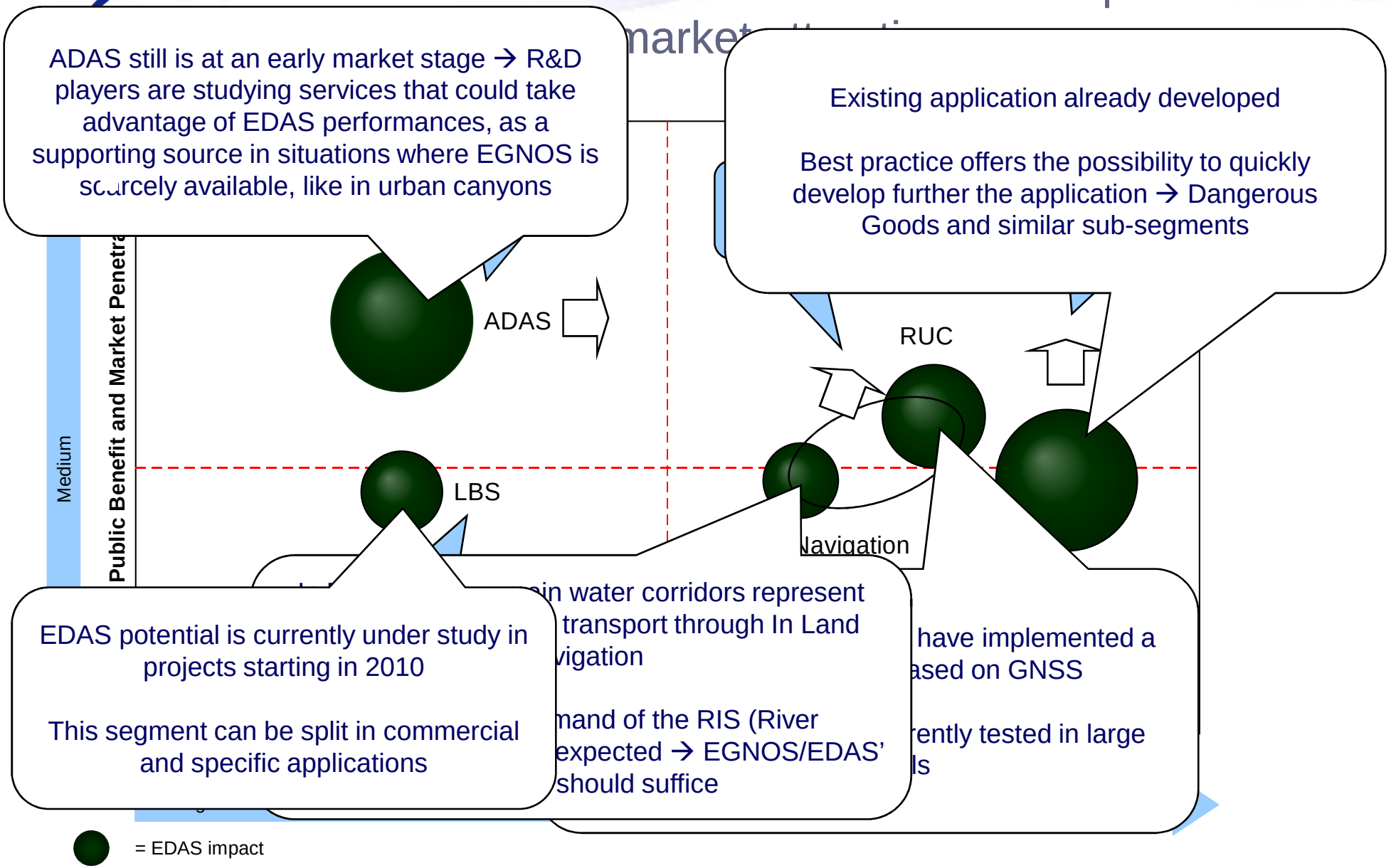
Reliability of Service
Data content
Availability



Target segments need a medium accuracy and are prone to regulation



Time-to-market will be decisive in a first step of market



The Future

EDAS has proved to be able to play a role within the identified market segments. There is a continuously growing EDAS user community. Despite this, EDAS can be improved in order to better meet current user needs and attract new users, user groups and segments.

It is important to take note that all here mentioned EDAS system enhancements will be fully backward compatible. That means, current users will be able to stick with the present configuration of their application even after releases of new EDAS versions.
As for the system level, there was evidence during the beta test that the current EDAS system does not respond fully to the user needs. In order to better meet the user needs, developments of the server itself and new development regarding the software will be necessary.

Examples of expected (main) system enhancements are:

- Server side data filtering
- Archive of historical data
- Basic data stream provision (EGNOS corrections only)
- Dissemination of RIMS raw data in the NTRIP protocol

…

Several other system and service-level enhancements are currently under investigation.

Conclusions

EDAS provides access to EGNOS data in real-time, with a high-level of reliability in terms of latency and availability of the data.

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

The potential EDAS market was identified mainly related to a medium level of accuracy and regulated markets. Five segments were identified that can be seen as potential EDAS segments, even though at a different level of development, including Dangerous Good Transportation, Road User Charging (RUC), In Land Navigation, ADAS and LBS.

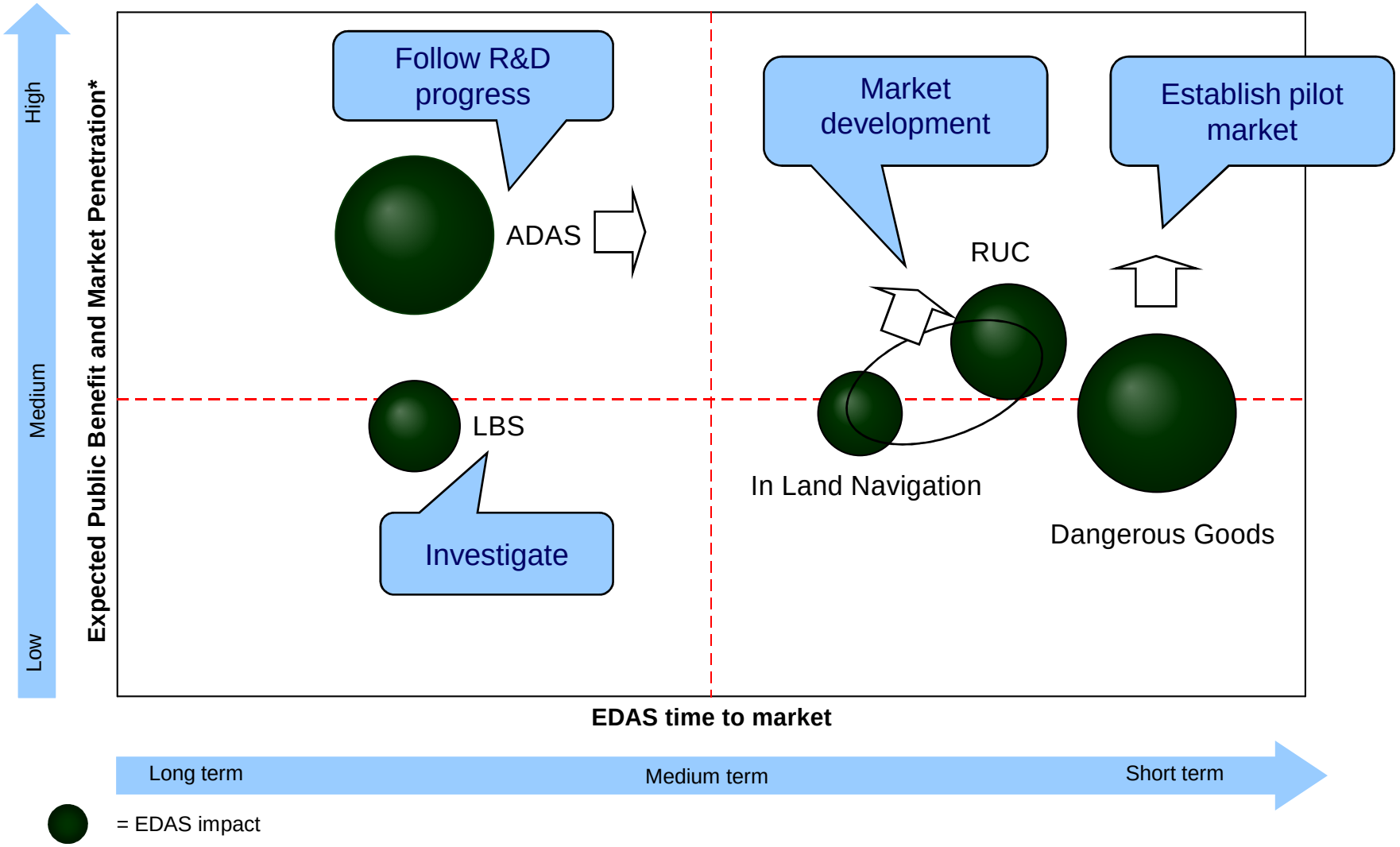
EDAS has proved to be able to play a role within the identified market segments. There is a continuously growing EDAS user community. Despite this, EDAS can be (and is being) improved in order to better meet current user needs and attract new users, user groups and segments.

ACKNOWLEDGMENTS

We would like to thank the EC, all the beta test users and third company players that contributed to our study, for their availability and willingness to provide a feedback and share with us knowledge and information on their projects and activities.

Backup EDAS

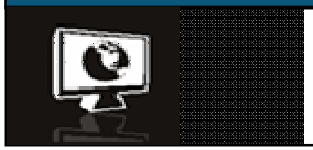
Time-to-market will be decisive in a first step of market entry compared to market attractiveness



EDAS is available for a free trial before being made available for commercial licences

Plug in for free

A free Beta trial phase for EDAS is now available. This allows any interested parties to sign-up to access EDAS for free



During the evaluation different market scenarios are currently assessed including a commercial service delivery model

For more information on EDAS and to sign up please go to:
http://egnos-edas.gsa.europa.eu

FP7 projects using EDAS

COVEL - Cooperative Vehicle Localization for Efficient Urban Mobility
ROAD (Germany, France, Italy, Netherlands)

GNSSmeter - GNSS-based metering for vehicle applications and value added road services
ROAD (Austria, Germany, Spain, Switzerland, UK)

Golden Ice - improvinG the efficiency Of saLt-spreaDing (de-icing) sErvices and emergeNcy call management on wInter professional vehiCles using Egnos
ROAD (Czech Republic, France, Germany, Italy)

LIVELINE - Live ICT services Verified by EGNOS to find Lost Individuals in Emergency situations
LBS (Luxemburg, Netherlands)

PERNASVIP - PERsonal NAvigation System for VIsually disabled People
LBS (France, Greece, Spain)

SCUTUM – SeCUring the EU GNSS adopTion in the dangeroUs Material transport
ROAD (Italy, Belgium, France)

ERSEC – Enhanced Road Safety by integrating Egnos-Galileo data with on-board Control System

INCLUSION – Innovative LBS for Social/Public Dimension

EDAS is the one way access point for plugging into EGNOS

- RIMS Antenna Phase Centre (APC) coordinates, currently broadcast every 30 minutes
- Possibility to receive Air Traffic Control (ATC) messages generated in EGNOS
  - Feature currently disabled