2010 ANNUAL ACTIVITY REPORT

European GNSS Agency

30th Meeting of the GSA Administrative Board

Brussels, 30 June 2011

European GNSS Agency

GSA-AB-11-06-30-02

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LIST OF ABBREVIATIONS

Abbreviation	Definition
3SC	System Safety and Security Committee
ABR	Accounting Budgeting Reporting
AD	Administrator
AST	Assistant
ATL	Authorization to Launch
Authority/GSA	European GNSS Supervisory Authority
CAPEX	Capital expenditure
CEN-C	China-Europe GNSS Technology Training and Cooperation Center
CFSP	Common Foreign and Security Policy
CNES	Centre National d'Etudes Spatiales
Commission	European Commission
DCN	Document Change Notice
DG	Directorate General
DIGIT	Directorate General for Informatics
Dpt	Department
EASA	European Aviation Safety Agency
EC	European Community
EDAS	EGNOS Data Access System
EETS	European Electronic Tolling System
EGNOS	European Geostationary Navigation Overlay Service
ESA	European Space Agency
ESOC (ESA)	European Space Operations Centre
ESSP (SAS)	European Satellite Services Provider
EU	European Union
EUROCONTROL	European Organisation for the Safety of Air Navigation

Abbreviation	Definition
Financial Regulation	Council Regulation (EC, Euratom) No. 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities, as amended by Council Regulation (EC, Euratom) No. 1995/2006
FOC	Full Operational Capability
FP6	6th Framework Programme for Research and Technological Development of the European Union
FP7	7th Framework Programme for Research and Technological Development of the European Union
GJU	Galileo Joint Undertaking
GKMF	GNSS Knowledge Management Facility
GMES	Global Monitoring for Environment and Security
GNSS	Global Navigation Satellite System
GNSS Regulation	Regulation (EC) No. 683/2008 of the European Parliament and the Council of 9 July 2008 on the further implementation of the European satellite navigation programmes (EGNOS and Galileo)
GNSS Security Board	The Security Board of the European GNSS Systems. It is composed of one representative of each Member State, selected from among the recognised experts in the field of safety and security, and a representative of the Commission.
GPS	Global Positioning System (USA)
GSA	European GNSS Agency
GSAP	Galileo Security Accreditation Panel
GSA Regulation	Regulation (EU) No 912/2010 of the European Parliament and of the Council of 22 September 2010 setting up the European GNSS Agency, repealing Council Regulation (EC) No 1321/2004 on the establishment of structures for the management of the European satellite radio navigation programmes and amending Regulation (EC) No 683/2008 of the European Parliament and of the Council
GSB	Galileo Security Board
GSC	GNSS Security Centre
GSMC	Galileo Security Monitoring Centre
GSS	Galileo Sensor Station
HR	Human Resources

Abbreviation	Definition
IAA	Initiating Agent and Administration
IAS	Internal Audit Service of the European Commission
IATO	Interim Approval to Operate
ICT	Information and Communications Technology
IOV	In-Orbit Validation
IPR	Intellectual Property Rights
IT	Information Technology
JIAC	Joint International Agricultural Conference
JMRD	Justification Mission Requirement Document
Joint Action	Council Joint Action 2004/552/CFSP of 12 July 2004 on aspects of the operation of the European satellite radio-navigation system affecting the security of the European Union
LBS	Location-Based Services
LEOP	Launch and Early Operations
LSAP	Local Site Security Accreditation Plan
MASPP	Multi-Annual Staff Policy Plan
MATIMOP	Israeli Industry Center for R&D
Member State(s)	Member State(s) of the European Union
MRD	Mission Requirements Document
NET	National Expert Group (working group of the GNSS Security Board)
NRSCC	National Remote Sensing Center of China
OPEX	Operational expenditure
OURD	Operator User Requirements Document
PACIFIC	PRS Application Concept Involving Future Interested Customers
PKMF	PRS Key Management Facility
PRS	Public Regulated Service
PSI	Programme Security Instruction

Abbreviation	Definition
R&D	Research and Development
RNAV	Area Navigation (method for airspace navigation)
SAA	Security Accreditation Authority
SACP	Security Accreditation and Certification Plan
SAR	Search And Rescue
SBAS	Satellite Based Augmentation Systems
SCDR	System Critical Design Review
SG	Secretariat-General
SME	Small Medium Enterprise
SoL	Safety of Life
SPCDR	System Preliminary Critical Design Review
SSRS	System Specific Security Requirements Statement
SS-SKP	Space Segment Security Key Point
SVT	System Validation Test
TBC	To be confirmed
TBD	To be defined
TEN-T	Trans-European Transport Network
TREN	Transport and Energy
UNIDROIT	International Institute for the Unification of Private Law
WG	Working Group

FOREWORD BY THE CHAIR OF THE ADMINISTRATIVE BOARD

2010 was a pivotal as well as productive year for the GSA. While a new Regulation provided updated direction and new stability for the Agency, the GSA took positive steps forward in several key task areas.

In the area of GNSS Security, among other things the GSA moved ahead in the development and definition of the PRS; initiated the preparation of the Galileo Security Monitoring Center (GSMC); and advanced on a range of activities in support of Galileo Security Accreditation.

In the area of Market Development, the GSA - in their work supporting FP7 GNSS application research - continued to reap the first results of the innovative projects from the first and second calls and launched the 3rd call for new research. A first 'GNSS Market Monitoring Report' was released and well-received; and substantial progress was made in terms of EGNOS market penetration in the Aviation, Road, Precision Agriculture and Mapping sectors.

Along with launching and expanding successful targeted communications campaigns for EGNOS promotion, the GSA organised the first 'Galileo Applications Days' in March 2010, which showcased a range of innovative GNSS applications. The event attracted wide public and media interest.

From a management perspective, the mandate of the first GSA Executive Director, Mr. Pedro Pedreira, expired at the end of June 2010. Since a new permanent Director could not be in place until the end of January 2011, it was necessary to appoint an interim Executive Director, Ms. Heike Wieland. In February 2011, Mr. Carlo des Dorides took up the position as the new GSA Executive Director.

In spite of the strains that the many changes in 2010 had on GSA staff, they persevered to achieve the objectives of the Agency. The staff has shown a very high degree of commitment to their tasks.

The GSA Administrative Board had a very intense year with many meetings. The Member States showed a keen interest for the activities of the Agency. It has been a real pleasure for me to chair this Board.

Per Tegnér

INTRODUCTION BY THE EXECUTIVE DIRECTOR

While I did not take up the post of GSA Executive Director until February 2011, I believe it is important to provide some introductory remarks on the overall context of the GSA during 2010 and its impact on the activities carried out during this period because, indeed, this year was quite significant and marked an important turning point for the Agency.

The activities of the Agency in 2010 were shaped by three important factors

First, the new Regulation 912/2010 aligned the Agency's tasks to the previous Regulation 683/2008 and further elaborates other specific activities, such as the creation of the Security Accreditation Board (SAB). In addition, Regulation 912 introduces a new governance structure for the Administrative Board by creating closer ties with the European Commission (EC). This is a meaningful step because it creates the conditions for a more efficient integration of the tasks carried out by the EC with those of the Agency, thus shaping a structure that can better meet the ambitious needs of a complex initiative such as the European GNSS Programmes. Furthermore, it sets the foundation for considering the Agency as a resource in the building up of a future scenario encompassing the exploitation of EGNOS and Galileo. Along these lines, this change in governance is reflected in the need to change the name of the Agency from the 'European GNSS Supervisory Authority' to the 'European GNSS Agency'.

The second key element in 2010 was the decision by the Transport Council to move the seat of the Agency from Brussels to Prague. Such a decision will be a major step in the life of the Agency which will unavoidably present a range of organisational and practical challenges, as well as introduce a new and different way of working with the EC. In this context, the determination, enthusiasm and proactivity of the Czech Republic will be fundamental to make a seat move happen smoothly and guarantee business continuity.

The final substantial factor that characterised this year, was the completion of the term of my predecessor and the subsequent interim mandate assigned for a significant part of the year (six months) to another member of the Agency's staff. This is another important variable to consider when evaluating the activities carried out in 2010. It underlies the changing nature of the Agency throughout the year and the unavoidable instability which it implied.

Activities carried out in 2010

The activities and the results achieved by the Agency must be considered against this evolving context. It is not for me to express an assessment about the achievements attained during the course of 2010, however I can say that, despite some first signals of concern brought about by the relocation to Prague, I have found an Agency that is motivated to face the very demanding workload induced by the multifaceted 2010 GSA Work Programme. This is a positive sign, especially in view of the ambitious challenges ahead in 2011, when the first launch of Galileo satellites in their final flight configuration is envisaged.

Carlo des Dorides

THE GSA IN 2010

In accordance with Article 6 of GSA Regulation, the Executive Director of the GSA shall prepare a draft general report of activities each year and submit it to the Administrative Board.

This report is composed of three chapters. The first chapter provides information on the GSA's tasks and on its financial and human resources. The second chapter summarises the three Administrative Board meetings held in 2010. The third chapter provides an overview of the activities performed by the GSA in 2010.

Annex 3 reports on the budgetary and financial management in 2009. Annex 4 details the FP7 projects in the security and market development areas.

CHAPTER 1: TASKS AND RESOURCES

1. TASKS OF THE GSA

1.1. Legal reference documents

- New GSA Regulation
- GNSS regulation
- work programme
- Commission guidelines
- Implementation plan
- Working arrangement with the Commission on security
- Delegations

1.2. Description of tasks

The termination of the Galileo concession in 2007 had an impact on the tasks defined under Article 2(a) (together with Article 2(j)(vii)) of the GSA Regulation.

Furthermore, the entry into force of the GNSS Regulation on 25 July 2008 led to a redefinition of the GSA's core responsibilities and tasks. The GNSS Regulation restructures the governance of the European GNSS programmes, based on a clear division of tasks between the Commission, the GSA and ESA. It confers on the Commission the responsibility for the management of the European GNSS programmes and establishes that ESA shall act as procurement agent.[1]

The overall mission of the GSA is expected to be reviewed in the amendment of the GSA Regulation, which the Commission presented to Council and the European Parliament in 2009. Until the adoption of such amendment, the GSA's mission is considered to be shaped by the GSA's role defined in the GNSS Regulation.

As regards the tasks of the GSA in the GNSS Regulation, Article 16 thereof provides the following:

[1] ESA shall also act as design authority for the European GNSS programmes. See Commission Decision C(2008)8371 of 12 December 2008 adopting the 2008 Work Programme of the European satellite radio-navigation programmes (EGNOS and Galileo) and Commission Decision C(2008)8378 of 12 December 2008 adopting the Strategic Framework of the GNSS Programmes.

"Subject to the provisions of Article 12 [GNSS Regulation] and the respect of the Commission's role as manager of the programmes, the [GSA] shall accomplish the following tasks within the programmes in accordance with guidelines[2] to be issued by the Commission:

(a) with regard to the security of the programmes, and without prejudice to Articles 13 and 14 [GNSS Regulation], it shall ensure:

(i) security accreditation; to that effect it shall initiate and monitor the implementation of security procedures and perform system security audits;

(ii) the operation of the Galileo security centre, implemented in accordance with decisions taken pursuant to Article 13 [GNSS Regulation] and the instructions provided under Joint Action 2004/552/CFSP;

(b) it shall contribute to the preparation of the commercialisation of the systems, including the necessary market analysis;

(c) it shall also accomplish other tasks that may be entrusted to it by the Commission, in accordance with Article 54(2)(b) of the Financial Regulation, addressing specific issues linked to the programmes, such as:

(i) promoting applications and services in the satellite navigation market;

(ii) ensuring that the components of the systems are certified by the appropriate, duly authorised, certification bodies."

In 2008, based on a decision of the Administrative Board,[3] the GSA prepared the transfer of those activities falling outside the scope of its role under the GNSS Regulation to the Commission. The transfer of such activities and associated staff took effect on 1 January 2009. The relevant assets were transferred from the GSA to the European Union over the course of 2009.

2. BUDGET

2.1. Budget

The operating subsidy made available to the GSA by the budgetary authority for 2010 amounted to €7,890,000.

The budget for 2010 underwent one amendment by the Administrative Board. Additionally, by decision of the Executive Director, two internal transfers were made, all of which is described in detail in the Report on Budgetary and Financial Management 2010 (see Annex I).

The execution rates were very high, reaching 97 per cent for the expenditure financed by the EU operating subsidy, and 89 per cent for the operational activities financed from earmarked revenue.

In addition to the subsidy received from the Community budget, the GSA had to manage substantial funds received as assigned revenues from 2007. Further details on the assigned revenues and on the other aspects of the budgetary and financial management are provided in Annex I.

The total appropriations managed in 2010 amounted to €74,488,932 for commitment appropriations and €63,027,216 for payment appropriations.

[2] The "Commission guidelines to the European GNSS Supervisory Authority," C(2009)1153 final, 25 February" have been notified by the Commission to the GSA. They are an integral part of GSA's Work Programme 2009.
[3] 17th Meeting of the GSA Administrative Board on 9 October 2008 (GSA-AB 08-10-17-15).

3. PERSONNEL

3.1. Recruitment

The GSA launched 16 recruitments and reached a total headcount of 41 by year's end.[4]

An overview of the number of staff per grade is provided in Table 1.[5]

Table 1: Number of staff per grade

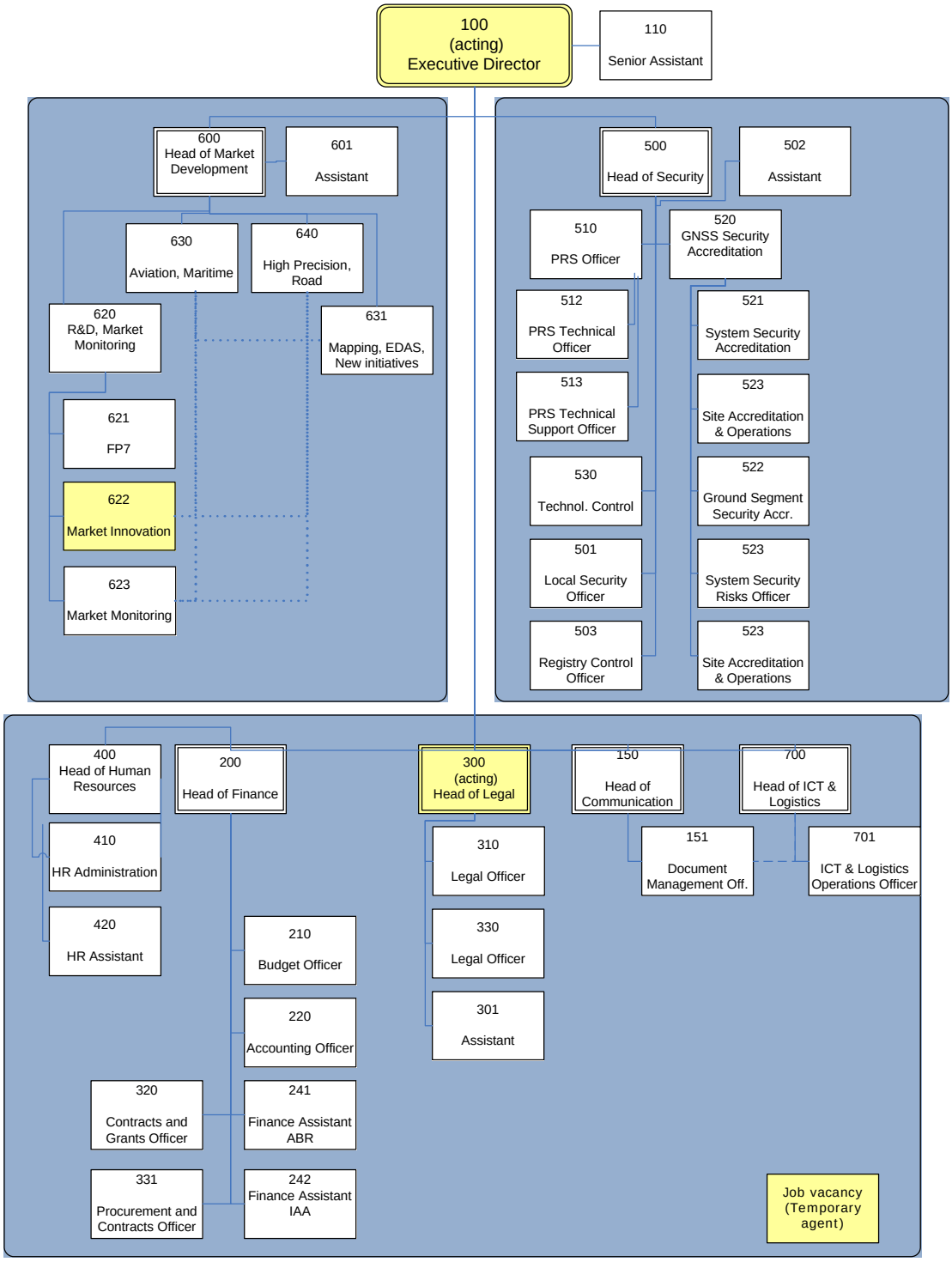
Category and grade	Number of staff on 31 Dec 2010
AD 16	0
AD 15	0
AD 14	1
AD 13	0
AD 12	0
AD 11	2
AD 10	1
AD 9	1
AD 8	4
AD 7	9
AD 6	3
AD 5	1
Total grade AD	22
AST 11	0
AST 10	0
AST 9	0
AST 8	0
AST 7	0
AST 6	0
AST 5	1
AST 4	1
AST 3	0
AST 2	2
AST 1	
Total grade AST	4
Total staff	26

[4] 26 Temporary Agents; 13 Contract Agents; 2 Seconded National Expert.

[5] It is recalled that the Establishment Plan includes only temporary agent posts and not contract agents or second national experts.

The GSA's organisation chart, reflecting the status in December 2010, is provided in Figure 1.

Figure 2: Organisation Chart 2010



3.2. Appraisal and Reclassification

The performance appraisal process for 2010 was conducted at the beginning of 2010 under the management of the Interim Executive Director. The results of the appraisals were delivered to the new Executive Director together with the hand-over file prepared by the Interim Executive Director.

4. STAFF COMMITTEE

The newly elected staff committee organised three staff gatherings: New Year, May and just after the holidays in September. A discussion was initiated as to who should be responsible for organising staff events such as the Christmas dinner and the team building. In the opinion of the Staff Committee, these activities should remain with the HR unit. The staff committee also participated as requested in all recruitment and the Joint Reclassification Committee (JRC).

5. STATUS OF THE INTERNAL CONTROL

5.1. Internal Control Framework

The GSA uses the internal control framework developed by the European Commission, consisting of 16 standards for internal control.

5.2. Internal Audit Function of the GSA

The Internal Audit Service (IAS) of the Commission is the Internal Auditor of the GSA by virtue of articles 71, 72 and 73 of the GSA Financial Regulation. Within the GSA the Budget Officer acts as Internal Control Coordinator, liaising with the IAS.

5.3. Internal Control Activities in 2010

The most important activity during 2010 in terms of internal control was the finalisation of the GSA Risk Management Policy (adopted in April). As a result, a first risk management workshop took place in June 2010, which allowed the GSA to develop a risk register. The risk register will be revised, at least annually. This risk register includes detailed action plans per individual risk and clear mitigating measures. A review of the results and the methodology itself is scheduled in 2011.

At the end of 2010, there were no critical recommendations open by the IAS, but five open recommendations:

- Disclose objectives and performance indicators in the Annual Work Programme
- Formalise the appointment by the Administrative Board of the Accounting Officer
- Set up adequate financing decisions
- Reinforce key controls in grant management
- Update financial delegations and regularly assess ABAC users rights

All open recommendations are to be addressed in during 2011.

5.4. Ex post control on FP6 and FP7

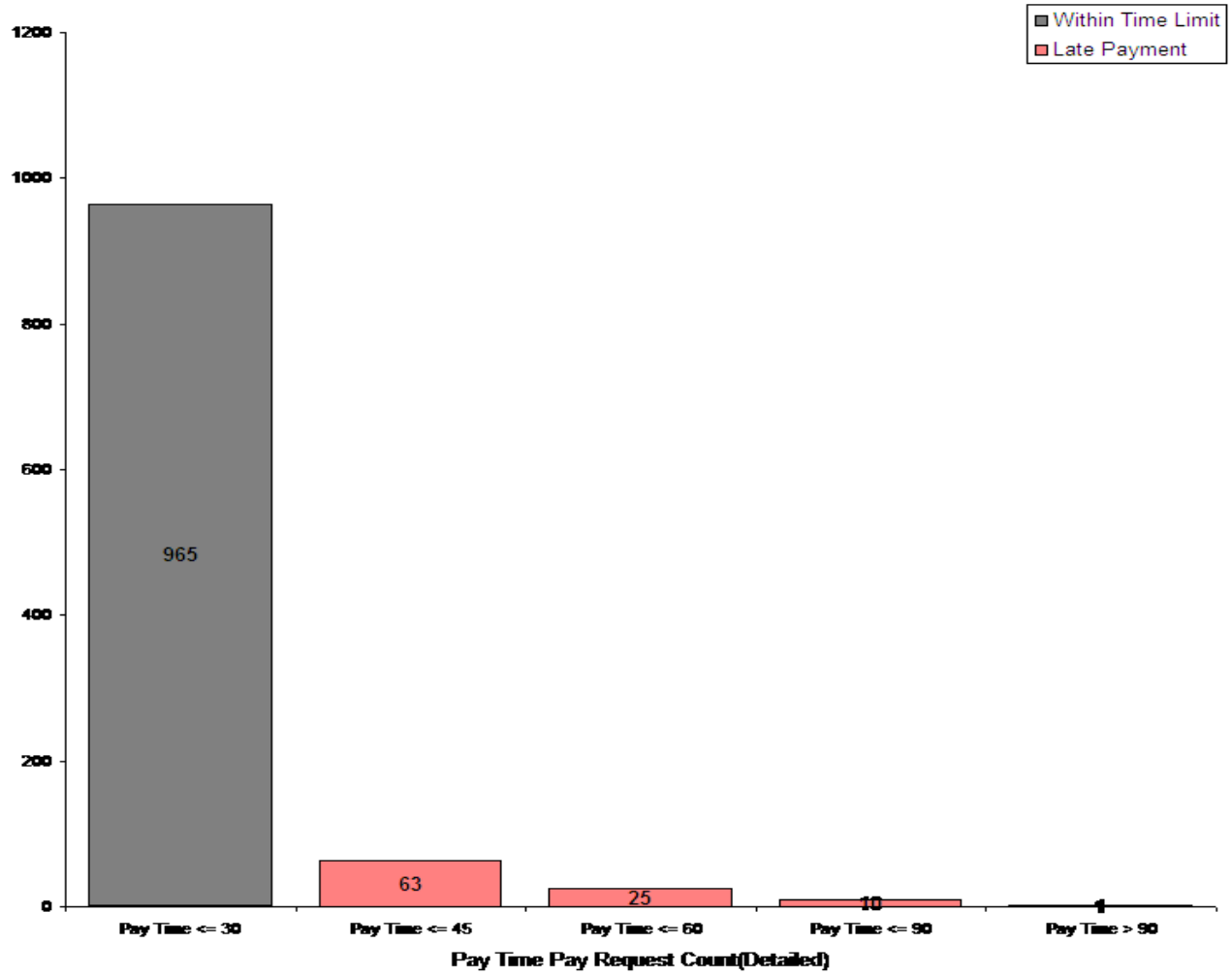
A contract was signed with Moore Stephens (via EC framework contract) to carry out an exhaustive ex post control on FP6 grants. Field work started in the second half of 2010 and it will be finalised in 2011.

5.5. Reporting to the Executive Director and Senior Management

Monthly reporting on financial management, financial execution and projections of costs per expenditure item are prepared by the Financial Department and sent to the Executive Director and senior management. Monitoring of financial transactions has been considered successful in 2010, leading to a 97% execution in the budget.

5.6. Report on late payments

	Pay Time <= 30	Pay Time <= 45	Pay Time <= 60	Pay Time <= 90	Pay Time > 90	Total
Within Time Limit	965					965
Late Payment		63	25	10	1	99
Sum:	965	63	25	10	1	1064



CHAPTER 2: SUMMARY OF ADMINISTRATIVE BOARD DECISIONS

The Administrative Board held five meetings in 2010 (AB22, AB23, AB24, AB25 and AB26). A summary of the main results of these meetings is provided below.

1. 22nd Meeting of the Administrative Board, held on 26 January 2010

At its twenty-second meeting, the Administrative Board:

- Decided not to renew the mandate of the current Executive Director of the Authority.

This decision meant that the post was to be published by the European Commission through a vacancy notice. After the selection process the Commission will propose to the Administrative Board a shortlist of at least three candidates for the post for the next term. Also the Chairman of the Administrative Board would be involved in the recruitment and selection process towards the European Commission as an observer.

2. 23rd Meeting of the Administrative Board, held on 2 March 2010

At its twenty-third classified meeting, the Administrative Board met to discuss a RESTREINT UE topic. The topic was:

- Security Accreditation of IOV satellites as a result of the issues surrounding the SAR transponders

The outcome cannot be disclosed in the present report.

3. 24th Meeting of the Administrative Board, held on 29 March 2010

At its twenty-fourth meeting, the Administrative Board:

- Distributed the minutes of AB22 for later adoption;
- distributed the minutes of AB23 for adoption in written procedure;
- approved the Provisional Work Programme
- approved the draft Budget 2011 , including the Establishment Plan;
- approved the Multi-Annual Staff Policy Plan 2011-2013
- adopted Implementing Rules related to Staff Regulations.[6]

[6] GSA-AB-10-02-24-06: Decision on general implementing provisions on the procedure governing the engagement and the use of temporary agents at the GSA;
GSA-AB-10-02-24-07: Decision on general implementing provisions on the procedure governing the engagement and the use of contract staff at the GSA;
GSA-AB-10-02-24-08: General implementing provisions on annual appraisal exercises for contract agents;
GSA-AB-10-02-24-09: Decision on implementing provisions on leave.

4. 25th Meeting of the Administrative Board, held on 23 June 2010

At its twenty-fifth meeting, the Administrative Board:

- adopted the minutes of AB22;
- distributed the minutes of AB237 for adoption in written procedure;
- gave its opinion on the annual accounts for the year 2009 after taking note of the preliminary observations of the European Court of Auditors. The Board expressed the following opinion:
  - the GSA's annual accounts 2009 present fairly, in all material respects, the GSA's financial position as of 31 December 2009 and the results of its operations and its cash flows for the year then ended, in accordance with the provisions of its Financial Regulation;
  - the transactions underlying the GSA's annual accounts for the financial year ended 31 December 2009 are, in all material respects, legal and regular.
  - On the basis of the final accounts and the Court of Auditors' opinion, the Board has obtained sufficient assurance to conclude that the said accounts, taken as a whole, give a true and fair view of the GSA's budgetary and financial management in 2009.
- Amended the establishment plan for the year 2010
- Amended the budget 2010

5. 26th Meeting of the Administrative Board, held on 18 November 2010

At its twenty-sixth meeting, the Administrative Board:

- Adopted the minutes of AB23. The changes proposed by members of the Administrative were taken into account. The minutes can be consulted at the GSA.
- approved the new internal organization of the GSA
- approved the draft Work Programme for the year 2011-06-01 as follows:
  1. The Board notes that the Commission could not yet finalize the procedure according to Article 6 (b) GNSS Agency Regulation for the adoption of the formal opinion of the European Commission.
  2. The Board notes that Article 5 (7) GNSS Agency Regulation foresees that the work programme has to be adopted with a favourable vote by the Commission.
  3. The Board approves the Draft Work Programme GSA AB 10-03-24-03 rev. 1 of the European GNSS Agency and invites the GNSS Agency to present the Work Programme 2011 for final adoption according to Article 5 (7) GNSS Agency Regulation once the opinion according to Article 6 (b) GNSS

[7] Classified information

Agency Regulation of the Commission has been notified to the GNSS Agency and once the suggested modifications have been implemented.

§ Adopted the budget for the year 2011 including the Establishment Plan as follows:

1. The Board notes that the budget will become final following definitive adoption of the general budget of the European Union8.

2. The Board adopts the Budget 2011 (Ref GSA-AB-10-03-24-04 rev.1), which includes the Establishment Plan 2011.

6. Written Procedures

In 2010, the Administrative Board decided on three occasions to initiate a written procedure:

6.1. Written Procedure No. 14: Decision on the appointment of an ad interim Executive Director adopted on 31 May 2010

The Administrative decided to appoint Mrs Heike Wieland as the Interim Executive Director of the GSA from July 1st, 2010, until the permanent Executive Director is recruited.

As there is no possibility either to prolong the present Executive Director's term or to appoint an external candidate, the only option that is formally available is to appoint a current staff member of the GSA.

6.2. Written Procedure No. 15: Adoption of the minutes of AB23 adopted on 15 September 2010

The written procedure was aborted due to comments received by members on the contents of the classified meeting. The minutes were presented for adoption at the 26th meeting of the Administrative Board held on 18 November 2010 and were adopted.

6.3. Written Procedure No. 16: Adoption of the minutes of AB24 adopted on 31 August 2010

The minutes of the 24th meeting of the Administrative Board held on 29 March 2010 were adopted on 31 August 2010.

[8] See Article 13 (10) GNSS Agency Regulation

CHAPTER 3: OVERVIEW OF ACTIVITIES IN 2010

This chapter provides an overview of the GSA's activities in 2010. It is broken down according to the main lines of the GSA's activities in 2010.

The core priorities of the GSA as outlined in the Work Programme 2010 were:

Security accreditation:

- Management of the Galileo security accreditation activities, including the coordination of the GSAP.
- Support[9] in:
  - the evolution of the Galileo SSRS for the FOC phase;
  - any relevant security aspects of the safety certification of EGNOS.
- Setting up of the GSA Security Accreditation Board

GSMC:

Support in the definition of the GSMC requirements.

PRS User Segment:

Support in the preparation of the PRS user segment, mainly through the launch of the definition studies for the PRS Pilot projects[10] and through the standardisation of receivers, as well as support in the establishment of a PRS access policy.

GNSS Technology Control Regime:

Support in the establishment of a GNSS technology control regime.

GNSS Security Board and associated working groups:

Support in the management of the GNSS Security Board and associated working groups, through technical, secretarial and logistical support. Such support shall include, where appropriate, the coordination between different security bodies.

Preparation of the commercialisation of the systems:

- Contribution to the promotion of EGNOS and to the preparation of the necessary service elements, for civil aviation and other promising user communities;
- Support the Commission in the analysis of the structuring of the Galileo exploitation phase.

FP6 and FP7

Under delegation of the Commission, management of the activities related to the security of the systems and the development of GNSS applications, including the FP7 1st , 2nd calls and preparation of the FP7 3rd call.

[9] Unless otherwise specified, "support" shall mean "support to the European Commission."
[10] The launch of the PRS Pilot projects is subject to the approval of the necessary funds. The GSA budget 2009 only foresees preparatory studies.

1. SECURITY

6.4. General Information

6.4.1. Organisation

At the end of 2010, the Security Department was composed of 14 staff covering the following activities and posts:

- Management and administration (4): Head of Security Department, Assistant to the Security Department, GSA Registry Control Officer, GSA Local Security Officer.
- EGNSS Security Accreditation (6): GNSS Security Accreditation Officer, System Security Accreditation Officer, System Security Risks Officer, Site Accreditation and Operations Officer, Site Accreditation and Operations Officer, Component and User Segment Security Accreditation Officer.
- Galileo Security Monitoring Center or GSMC (1): Interim GSMC Operations Manager Operations, also in charge of concluding the work of the GSA in 2010 on the preparation of a European GNSS Technology Control Regime (see next chapters).
- Public Regulated Service (PRS) for Galileo governmental applications (3): PRS Officer, PRS Implementation Officer, PRS Technical Support Officer.

6.4.2. Budget

History and plan until 2014 for the evolution of GSA operational budget dedicated to security activities is indicated hereunder:

Budget line	Title III									
Sum of Total cost	Year									
Domain	2006	2007	2008	2009	2010	2011	2012	2013	2014	Grand Total
Accreditation			75,530.00 €		1,099,137.00 €	539,800.00 €	1,500,000.00 €	1,000,000.00 €	1,000,000.00 €	5,214,467.00 €
General						18,045.00 €				18,045.00 €
GSMC	699,570.00 €						1,500,000.00 €	1,500,000.00 €	1,000,000.00 €	4,699,570.00 €
PRS		379,363.00 €	748,395.00 €	1,279,654.00 €		798,743.00 €	500,000.00 €	800,000.00 €	1,000,000.00 €	5,506,155.00 €
Grand Total	699,570.00 €	379,363.00 €	823,925.00 €	1,279,654.00 €	1,099,137.00 €	1,356,588.00 €	3,500,000.00 €	3,300,000.00 €	3,000,000.00 €	15,438,237.00 €

Nota: there is a high risk that the budget needed for achieving these activities will not be appropriate compared to needs expressed in this table for the next years, creating serious impact on results expected from 2011.

6.4.3. Human resources

History and plan for the evolution[11] of the human resources (number of posts) allocated to the GSA Security Department is summarized in the figure hereunder:

	2006	2007	2008	2009	2010	2011	2012	2013	2014
GSMC	0	0	0	0	0	2	14	24	34
Management and administration	1	2	2	3	4	4	4	4	4
Security Accreditation	0	1	2	3	6	6	8	8	8
Technology Regime	0	1	1	1	1	0	1	1	1
PRS	1	1	1	2	3	3	5	5	5
Grand Total	2	5	6	9	14	15	32	42	52

The main evolution expected is for the development of the role of the GSA as future operator of the Galileo Security Monitoring Centres (GSMC) in France and United Kingdom, which is supposed to work on a 24/7 basis for ensuring the security monitoring of the overall Galileo system and the access to the PRS service for all the EU Member States.

[11] subject to the relevant annual budgetary decision

6.4.4. Working Arrangement between GSA and EC

An agreement in the form of exchange of letters on a Working Arrangement for the execution of security related tasks of the European GNSS Programmes between the European Commission and the European GNSS Agency has been prepared during the course of 2010[12]. The Parties recognised the need to co-operate in an efficient way for the achievement of the objectives of the security tasks related to the EGNSS Programmes, within the limits of their respective legal and institutional framework, including their respective annual work programmes and taking fully into account the capacity of the available human and financial resources. This Working Arrangement outlines the practical modalities of the cooperation between the Parties, without prejudice to the establishment of other forms of cooperation, if required for programmatic reasons. The cooperation framework concerns the following areas:

- Security Accreditation of the systems;
- Operation of the Galileo Security Centre;
- GNSS Security Board and associated Working Groups.
- PRS Pilot Project;
- PRS User Segment;
- European GNSS Technology Control Regime.

6.4.5. Security Agreement between GSA and EC

An Agreement between the European Commission and the Agency on the security and exchange of classified information has been prepared during the year 2009, enforced through a Commission Decision[13] on 20 October 2009 and practically implemented and experienced during the year 2010.

6.4.6. GSA Secured Network

The Agency has prepared during the year 2010 the definition, development and deployment of two secured networks named GSA RESTREINT UE Environment (GRUE) and GSA SECRET UE Environment (GSUE) authorising respectively the handling, storage and distribution of classified information at levels RESTREINT UE and SECRET UE. Security Accreditation of these two systems is ensured by the GSA, with the support mainly of the Commission Security Directorate and of an external company in charge of preparing the accreditation file (security requirements, security operating procedures, installation and configuration guidelines).

6.5. PRS User Infrastructure and User Segment

6.5.1. GNSS Security Board and associated working groups

Background

The GNSS Security Board (GNSS SB) assists the Commission in implementing the provisions of Article 13(1) of Regulation (EC) No 683/2008 and in examining matters concerning the security of the European GNSS systems. The Commission consults it prior to defining the main requirements, provided for in Article 13(2), concerning the security of the systems and it provides on-going support to the Commission as regards the implementation of the provisions of Article 13(3).

The GNSS SB has set up in 2010 working groups and tasks force in order to be in the best position to advise the Program Manager. The roles of the working groups and task forces are the following:

- The WG-NET main task is to advise and report to the GNSS SB on all issues relating to support of the Program on security, e.g. supporting the Commission in defining the applicable security requirements (SSRS) and on the threat and vulnerability analysis.

[12] And finally enforced on 21 February, letter ref. GSA/2011/OED/SD/D506163

[13] Commission Decision of 20 October 2009 on the conclusion of an administrative Agreement between the European Commission and the European GNSS Supervisory Authority on the security and exchange of classified information, ref. 2009/846/EC.

- The WG-PRS main task is to advise and report to the GNSS SB on all issues relating to PRS service development.
- The WG-PCI main task is to advise and report to the GNSS SB on all issues relating to protection of classified information.
- Three Task Forces (TFs) have also been created for the period 2009-2010:
    1. Task Force on Launchers with objective to provide the security principles to be included in the model agreement for the Galileo launch which take place outside Europe: TF-Launch.
    2. Task Force on Project Security Instruction (PSI) with objective to merge the two current PSIs into a single one: TF-PSI. The work of the TF-PSI was finalised in September 2010 through the approval by the GNSS SB to update the PSIs and to set up a Working Group on the Protection of Classified Information (WG-PCI) in September 2010.
    3. Task Force on Galileo Control Regime with objective to prepare the security principles to be applied to a Galileo Control Regime: TF-Control. The work of the TF-control was finalised in December 2010 through the endorsement by the GNSS SB of two recommendations and a Galileo Export Control List.

Objectives 2010

Initial objectives defined in the WP 2010 of the GSA were the following:

- Definition of the PRS receivers communication channel (phase A study);
- Support to the Member States in the promotion of the PRS;
- Update of PRS T&V with support to the CSC-GNSS;
- Technical, secretary and logistical support to the GNSS Security Board, working groups and task forces;
- Coordination and support in the updating of the GNSS Security Board documentation;
- Generation and distribution of Chiasmus keys needed by European GNSS PSI participants.

These objectives have been detailed as stated in the working arrangement established with the EC (see section 1.2.2); the Agency provides a transverse support to the EC in the management of the GNSS Security Board and associated Working Groups and Task Forces, in line with its specific responsibilities in the security accreditation of the systems and in the operations of the Galileo Security Monitoring Centre.

In order to ensure performance of these activities and optimize interaction with the EC, the Agency participates at the meetings of the GNSS Security Board and contributes to the reporting associated to the WG-PRS, the WG-NET, the WG-PCI, the TF-Control, and the TF-Launch, or any ad hoc group created under the GNSS Security Board roadmap as requested by the EC.

Finally it has been agreed that the Agency can provide technical assistance to the EC for:

- Provision of technical, secretarial and logistical support to the WG-PRS and its subgroup WG-CMS;
- Technical support to the WG-NET and to the WG-PCI;
- Chairing and providing of technical, secretarial and logistical support to the TF-Control;
- Preparing documents in the form of minutes, technical notes analysis or draft Document Change Notices (DCNs), as required, depending on the topics;
- Establishing and managing a DMS ensuring a coordination and update of the GNSS Security Board documentation, the Systems Security Accreditation documentation and of the PRS User Segment documentation;
- Generating and distributing Chiasmus keys needed for protection of information classified at “RESTREINT UE” level by the GNSS Security Board related groups of participants.

Achievements

All but one of the objectives mentioned here above have been achieved while considering the following remarks:

- Update of the PRS Threat and Vulnerabilities analysis with support to the CSC-GNSS was not possible as it was associated to the award of a support contract which happened only at the very end of 2010; in addition, budget available was not sufficient for including this task which will not be achieved in 2011 as well;
- Support to the Member States was achieved mainly through the organisation of workshops and presentations in conferences (e.g. Galileo application days from 3 to 5 March, PRS workshop in Germany on 31 May, Munich Summit from 9 to 11 March, Growing Galileo info day on 22 September, ION GNSS in US from 21 to 24 September, PRS workshop in Malta on 17 October, PRS workshop with the European Defense Agency on 19 November, PRS workshop in France on 2 December);
- No request from EC for updating the GNSS Security Board documentation.

The GSA has especially supported the WG PRS, WG CMS and the TF-Control in 2010 while providing a regular but punctual support to the WG NET in the preparation of the SSRS 3.9 (see section 1.1.4). Main results achieved for supporting the WG PRS and WG CMS are the following[14]:

- WG PRS: technical and logistical support of 8 meetings in the year 2010.
- Definition of guidelines and rules on PRS
  - PRS Concept of Operations (CONOPS)
  - PRS Common Minimum Standards (CMS)
  - Security Classification Guide for the PRS User Segment
  - PRS Service Definition Document
- PRS Pilot Project
  - GSA Executive Summary Procurement PIONEER 2010-2011
  - Statement of work for PIONEER15 1 “Central Support Project”
  - Statement of work for PIONEER16 2 “Early Availability PRS receivers Project”
- PRS Receivers
  - PRS Receiver System Specific Security Requirement Statement (SSRS-PRS-RX)
  - PRS Receiver System Interconnection Security Requirement Statement (SISRS-PRS-RX)
  - PRS Receiver Concept of Operations (CONOPS) and Security Operating Procedures (SECOPS)
  - PRS receiver and PRS Security Module Protection Profiles
  - Technical report on PRS Secondary Channel Architecture Concept
  - Technical report on PRS PMR Communications Channel Architecture Concept
- Management of the PRS user segment documentation tree
  - Preliminary Definition of the Document Management System
  - Preliminary Definition of the PRS User Segment Documentation Structure
- Others
  - GSA Executive Summary of FP7 and Internal contracts on PRS
  - Organisation of a workshop with support of industry on PRS standardisation
  - PROPHET High Level Concept Summary

[14] For WG NET and TF-Control, please refer respectively to chapters Error! Reference source not found. & Error! Reference source not found.
[15] PIONEER: Programme for the Initial Operations of National and European Equipment towards the Regulated service
[16] PIONEER: Programme for the Initial Operations of National and European Equipment towards the Regulated service

- Phase A study of the PRS key management

Main issues and recommendations

Main issues encountered during the achievement of these tasks are due to limited human resources and to the lack of WG-PRS and WG-CMS annual plans, creating difficulties for the GSA to respond appropriately and timely to EC.

6.5.2. Operation of the Galileo Security Monitoring Centre (GSMC)

Background

The “GNSS Agency” Regulation Article (6) gives to the Administration Board of the “GNSS Agency” the duty to "oversee the operation of the Galileo security centre (hereinafter the "Galileo Security Monitoring Centre" or the "GSMC") as referred to in Article 16(a)(ii) of Regulation (EC) No 683/2008."

In addition, “GNSS Agency” Regulation Article (8) gives to the “GNSS Agency” Executive Director the duty to “ensure that the Agency, as the operator of the GSMC, is able to respond to instructions provided under Joint Action 2004/552/CFSP.”

The GSMC will be a secure EU facility that provides a secure method for PRS users to interact with the Galileo System Operator. This will simplify the operation of the Galileo system and provide assurance to PRS users that sensitive information relating to their use of Galileo is suitably managed and protected.

The GSMC also coordinates the implementation of Joint Action instructions received from the EU SitCen.

The GSMC security role is such that it will be staffed by “GNSS Agency” personnel, possibly supported by security experts seconded from MSs.

The GSMC is required to deliver the following specific missions:

- Management of PRS access (including receiver and PRS order management);
- Command and control of operating modes affecting the security of Galileo services;
- Galileo security monitoring (including signal compliance and PRS Security Message verification);
- European GNSS crisis and security event response;
- Process management, such as the dissemination of Security Operating Procedures (SOPs);
- Crypto Distribution Authority Roles, including the key management flight cell;
- Provision of European GNSS security expertise and analysis.

The POC platform (POCP) provides the interface between user communities, through a national Point of Contact (POC) and the GSMC. Each MS, as well as authorised EU Bodies and Third Nations, may have a POC and therefore a POCP. The managers of PRS user communities who arrange the PRS use of individual users (e.g. an emergency service HQ) communicate with the GSC via the POCP. The high level mission of the POCP is to enable a POC to perform the interactions required with the GSMC, allowing users to effectively utilise the Galileo services (in particular the PRS), as well as supporting European GNSS security.

Objectives 2010

Main objectives of GSA tasks related to the preparation of its future role of GSMC operator are the following:

- Preparation of the hosting facilities for the GSMC
- Consolidation of a GSMC development plan
- Preparation of the GSMC initial operation
- Follow-up of GSMC technical definition and procurement undertaken by ESA.

Achievements

Main achievements have been the following:

- Follow-up of the GSMC technical definition through the participation to GSMC Preliminary Design Review. The Review was held from May 2010 until Sept 2010, the GSA provided 246 Review Item Discrepancies (RIDS), participated to both the Technical and the Management Review panels.
- GSMC CONOPS Development: purpose of such document is to "describe the characteristics of a proposed system from the viewpoint of an individual who will use or interact with that system". GSA delivered a draft PRS CONOPS to WG-PRS as a template for Member States to use in developing the Galileo Operations Environment. This document will be used in 2011 to define the detailed GSMC site requirements (input to hosting entities), to start defining GSMC Security Operating Procedures (SOPS as input to GSA GSMC development) and to provide input to GSMC equipment developers (input to Galileo Programme WP2).
- GSMC Operator Site Requirements: two GSMC sites were selected for development by the EC, one based in the UK at Swanwick and another one based in France at St Germain-en-Laye. GSA contributed to the ESA Led Site Infrastructure requirements by developing a plan for multisite access to GSA unclassified and restricted IT networks, a staffing plan and by providing space requirements.

Main issues and recommendations

GSA is still waiting a clear tasking for GSMC Operations development from the European Commission. In addition, considering that internal GSA GSMC resource is limited (at present) to one member of staff to meet the above tasks, a significant proportion of this work will need to be subcontracted. GSA intends to launch a GSMC Operations Support Framework Contract in 2011 to provide expert support to the preparation of GSMC Operations.

6.5.3. PRS Pilot Project

Background

Galileo's PRS is an encrypted location service that will be used by European governmental agencies, such as police and emergency services. The first PRS signals will be available from the first half of 2012 with the launching of the four In Orbit Validation satellites currently planned on 20 October 2011.

In order to ensure that the PRS can be used as soon as Galileo is operational, the concept of PRS Pilot was proposed in 2008 specifically to target the validation of PRS users' functions and to accelerate preparatory activities in Member States.

The overall objective of the PRS Pilot is to perform in a single framework an optimised pre-operational validation of all PRS users' functions.

This pre-operational validation is essential as the PRS environment is more complex than that of the other Galileo services. In addition to the deployment of a service with particular technical features and performances, a security framework has to be put in place. Beyond the Galileo infrastructure, this framework will require the involvement of the Member States. The PRS Pilot is thus intended to provide a programme of work that facilitates Member States in undertaking the setting up of joint projects, validating and optimising a PRS infrastructure and enabling synergies between the PRS activities of different Member States.

A study financed by internal funds[17] has supported in 2009 the GSA's work in defining and launching the implementation of the PRS Pilot. The main aims of this definition study were:

- To agree on the scope of the PRS Pilot, specifically in terms of mission objectives and participants.
- To identify the possible financing mechanisms of the PRS Pilot Projects, and to identify the interest of member States to be engaged in PRS Pilot Projects as leaders.
- To define architecture and tools concepts for specific PRS Pilot Projects, including the identification of opportunities for using national initiatives and existing capabilities in the EU.

[17] through the GSASS contract (ref. GSA/OP/04/07-03), Task 5

- To provide an outline implementation plan for the phasing of these PRS Pilot Projects and enable the effective initiation of the projects.

All Member States have been invited to join this initiative. A first Workshop was organised on 10th March 2009 based on a questionnaire which was sent to the Council, 27 EU members and 2 ESA members (Switzerland and Norway). Detailed responses were received from 13 Member States and the Council. Those responses have allowed the elaboration of candidate scenarios for PRS Pilot Projects and associated possible involvement of the Member States.

A second Workshop was organised on 16th September 2009 based on validation meetings with Member States potentially interested in the Pilot Project process. Pilot Projects derived primarily from the previously identified scenarios were defined at this stage according to the feedback received during the validation exercise. In addition, a number of further initiatives have also been identified which deliver the technological innovations required to support the PRS Pilot Projects.

An initial set of Priority Projects and Enabling Projects were established along with a set of longer term follow-up projects to be further elaborated at a later stage. Based on the Workshop discussions, the PRS Pilot Study team has elaborated outline planning for the Pilot Projects as well as a technology roadmap for the PRS Receivers.

The PRS Pilot Study has successfully achieved its objectives. It has been established that several Pilot Projects with specific objectives, participants and timescales will be launched. At this stage the following four phases were identified:

- PRS Awareness – helping Member States to answer their technical and operational questions regarding PRS;
- Pilot Preparation – clarifying user needs and service definitions, designing and developing tools, processes and prototypes of operational PRS receivers;
- Trials – for both equipment and processes, using In Orbit Validation and then Full Operational Capability features, prototypes and early PRS receivers;
- PRS pre-accreditation – using the Galileo system progressively as it becomes operational but with System and Production receivers' accreditation still in progress.

The GSA released officially in December 2009 to the Commission and to all the EU Member States the main results of this definition study, including the following documents:

- PRS Pilot System Concepts describing the Pilot scenario concepts, discussing the the potential Member State engagement in the scenarios in particular in terms of participation, proposing a timeline for the scenarios based upon the input dependencies (e.g. availability of tools from procurement activities);
- PRS Tools Concepts providing an overview of the tools that are relevant to the scenarios defined with a timeline for the tools based upon the input dependencies (e.g. availability of tools from procurement activities), describing especially the receiver tools that are relevant to the scenarios defined;
- PRS Pilot Project Plan providing further details for each of the recommended pilot projects, including objectives, success factors, participants, deliverables, dependencies and a work breakdown structure and providing an overview of the activities related to the PRS User Segment (Receiver) Roadmap proposed to be undertaken within the frame of the Pilot in order to ensure that users can make use of the PRS service as soon as it is available;
- PRS Pilot Initial Costs Estimates providing a summary analysis of the initial cost estimates for the PRS Pilot projects and giving background on the assumptions made in generating the cost estimates.

Objectives 2010

Main objectives allocated to the GSA were the following:

- Launch of the first phase of implementation of the PRS Pilot Project, based on the preliminary development plan and initial cost estimates prepared in 2009 and submitted to the Commission;
- Assessment, in the frame of the PRS Pilot Project, of the match between the PRS technical design and the operational requirements and identification of tools (including a global PRS

data model) that may need to be developed to support PRS implementation in Member States.

Achievements

Practically, the Commission launched bilateral consultations of the EU Member States which started in February and March 2010, objective being to set-up between the parties a multilateral agreement. This consultation has not yet provided concrete result (no agreement in place), impacting the expected support by the GSA for the establishment and the implementation of the legal framework to be put in place with the Commission[18].

Considering these limitations, the work of the Agency has mainly consisted to maintain a set of proposals for the content of the Pilot Project, in the form of an executive summary[19].

6.6. System Security

6.6.1. European GNSS technology control regime

Background

The 2754th TTE Council (October 2007) conclusions stated: "[The Council] invites the Commission, in consultation with the European GNSS Supervisory Authority and the Council bodies competent in security matters, to draw up, taking account of the input from the Galileo Security Board, a control regime for transfer of sensitive GALILEO-specific items and technology and intellectual property rights to third parties as soon as possible; this control regime shall be in line with the existing export control and non-proliferation mechanisms in the European Union Member States preventing transfer of sensitive items and technology;"

Objectives 2010

Finally, the GNSS Security Board (GNSS SB) chair has set up at the beginning of 2010 a GNSS SB Task Force (TF) in order to provide recommendations on how to address the Council's request for a proposal to set up a Galileo Export Control Regime in the 2754th TTE Council (October 2007) conclusions. The remit of this task force was to continue the work initiated in the previous years by the Galileo Security Board (GSB) Working Group 2 and to bring a proposal to the Commission outlining both the needs of the Galileo programme and the means by which the programme can ensure that these needs are met by prepare the security principles to be applied to a Galileo Control Regime. The GSA was tasked by the EC to chair and manage this Task Force.

Achievements

The Task Force issued two recommendations that have been approved by the GNSS SB under silence procedure launched on 21 October 2010 and successfully ended on 8 November 2010. The two recommendations are to set up (1) contractual mechanisms to enforce control on the potential export of Galileo-related items, as well as (2) a mechanism triggering a consultation process when a request for an export licence of a Galileo-related item is being examined.

First proposal on a consultation process: items to be subject to the consultation process would be identified by the Member State processing the licence. In most cases, this will be done by asking industry to confirm if the items are related to the Galileo programme, although normal national procedures will be followed. Once relevant licence applications have been identified by the Participant State, the Participant State will simply include the programme Point of Contact (POC) as an advisor within their normal licensing processing procedure.

Second proposal outlining possible contractual controls to be put in place: the idea is simply to place a requirement on the supplier of goods and services that they must seek the approval of programme manager (or whomever the programme nominates) before exporting relevant items. A procedural mechanism should be provided to allow the company to seek such approval. Additional requirements can be added to deal with how a company can use the expertise or information that it gains in the course of carrying out the contract for other contracts.

[18] Is likely a delegation agreement, in accordance with Article 54(2)(b) of the Financial Regulation As defined in REGULATION (EC) No 683/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 July 2008 on the further implementation of the European satellite navigation programmes (EGNOS and Galileo).

[19] Executive Summary on the procurement pipeline 2010-11 of PIONEER, Issue 2.0, Brussels, 14 April 2010.

Main issues and recommendations

Following recommendations made by the Task Force at the end of 2010 to the EC has not yet been implemented:

- First proposal
  1. EC identifies a suitable POC as soon as possible and develops the proposal to include the details of the POC.
  2. Such a proposal should be submitted to Member States for approval and implementation to the GNSS SB and then the Programme Committee. Implementation can only take place after the EC confirms that the POC is ready to receive licences.
  3. EC develops guidelines aligned with the common criteria but specific to Galileo.
- Second proposal
  1. EC identifies a suitable POC as soon as possible and develops the proposal to include the details of the POC. This POC should be the same as the POC for the consultation process proposal.
  2. The EC should investigate the potential use of the Programme Security Instruction as an appropriate method to include "contractual" controls within the programme.
  3. EC should develop a list of items and associated technologies which are of concern to the Galileo Programme based on the draft already developed by the programme. The European Space Agency should be involved in this work.
  4. All Galileo activities should be covered by a single contractual control regime. This should include all phases of the Galileo programme including IOC, FOC and the Galileo Evolution Programme.
  5. A long term GNSS technology strategy should be developed which will bring Galileo Contractual Controls in line with long term EU technology policy. This would allow the use of incentives as well as restrictions to ensure the control of appropriate items.

6.6.2. Galileo Security accreditation

Background

EGNSS (Galileo and EGNOS) provide global services with a strategic dimension while maintaining and protecting the security and interests of the EU Member States. The EGNSS security doctrine supports an overall system policy enabling the European Union to maintain full control of EGNSS at all times. It has two objectives: a) Protect the system from accidental or deliberate attack that could result in disruption of the service; b) Mitigate subversive use of the system against the interests of EU Member States.

In order to ensure their credibility inside the EU but also on the international scene Member States and institutions have to satisfy the associated security requirements and have to develop the following capabilities:

- a regulatory link with the “Security Accreditation Board for European GNSS” (SAB) established by the GSA and consisting of MS representatives. The SAB acts as the Security Accreditation Authority for the EGNSS systems and for receivers containing PRS technology;
- an operational chain of command with the Council of the EU as political authority and with the Galileo Security Monitoring Centre (GSMC) to be operated by the European GNSS Agency (GSA). The GSMC acts as an executive body and ensures interfaces with MS governments and with the EGNSS operators for all aspects related to security and access to governmental applications.

As per Article 16 (a) of the GNSS Regulation[20], the GSA shall for what concerns the security accreditation of the EU GNSS "initiate and monitor the implementation of security procedures and perform system security audits".

As a consequence of this GNSS Regulation, a new GSA Regulation has entered into force on the 9th of November 2010. This new GSA Regulation changes significantly the governance and the organisation of the GNSS Security Accreditation activities.

In accordance with Regulation (EU) No. 912/2010, under the umbrella of the GSA, it has been established as of the 1st of December 2010 a new "Security Accreditation Board for European GNSS" (SAB) acting as the Security Accreditation Authority (SAA) for the EU GNSS systems and for receivers containing PRS technology. SAB Rules of Procedure have been finalised and approved. Main decisions to be taken by the SAB are the following:

- Approval of the security accreditation strategy (SAS);
- Approval of satellite launches;
- Authorisation to operate the systems in their different configurations and for the various services;
- Authorisation to operate the ground stations and in particular the sensor stations located in third countries;
- Authorisation to manufacture receivers containing PRS technology and their components.
- The SAB shall set up special subordinate bodies, acting on its instructions, to deal with specific issues. In particular, while ensuring necessary continuity of work, it shall set up:
- a Panel to conduct security analysis reviews and tests to produce the relevant risk reports in order to assist it in preparing its decisions;
- a Crypto Distribution Authority (CDA) to assist the Board in particular for questions related to flight keys.

Initial proposals have been submitted by the GSA to the SAB and discussed during the first meetings, for defining the mandates of the Panel (named GSAP for Galileo Security Accreditation Panel) and of the CDA[21].

In this context, the GSA Team is required to perform different technical tasks at different levels:

- System level: to perform system design review and system audits to verify that the Galileo System-specific Security Requirements (SSRS) are met.
- Local sites level: to support audits and on-site inspections to ensure that national security rules and regulations, as well as the Galileo Programme Security Instructions (PSI), are being met by the sites hosting Galileo stations.
- Security components level: to review the security requirements (security targets) of system components implementing security functions and to follow the component evaluation and certification process.
- PRS User Segment level: define and implement the Galileo PRS receiver certification, evaluation and accreditation process, as well as for the Galileo PRS manufacturers accreditation process.
- GSAP management tasks: including chairmanship, technical secretariat and organizational secretariat.
- CDA management: including chairmanship, technical secretariat, organizational secretariat and organisation of FKC activities for each launch campaign.
- SAB management tasks: including organizational secretariat, coordination and preparation of relevant files for accreditation decisions.

Objectives 2010

[20] REGULATION (EC) No 683/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 July 2008 on the further implementation of the European satellite navigation programmes (EGNOS and Galileo)

[21] These documents have been finally approved on 3 May 2011, during the SAB#4 meeting.

Main objectives of the year 2010 were the following:

- Coordinating the work of the GSAP;
- Participation at the Galileo procurement reviews on accreditation-related matters;
- Review of the technical documents needed for Galileo security accreditation at system, segment and element level;
- Assessment of the security of the system design and system deployment and associated risks and production of the respective accreditation reports;
- Conduct site security accreditation inspections;
- Participation at and analysis of results of security audit (statements of compliance) at system, site and component level.

Achievements

All objectives were achieved at the end of the year 2010, considering the following remarks and complements:

- Most demanding tasks have been the coordination of the GSAP in which all EU Member States are represented, the (major) contribution to the security expertise provided to the Galileo Programme on numerous security reviews and the conduct of site security inspections;
- System level
  - Main reviews achieved have been related to the validation of the system security design (IOV S-CDR), the preliminary design for the Galileo Security Monitoring Centre (FOC GSF-PDR), the preliminary design of future Galileo satellites (FOC SAT-PDR), the system risk analysis (IOV SSP) and the security specifications of the receivers used for testing Galileo signals dedicated to governmental use (IOV TUS2 ST).
  - Important report issued on the review performed by the Galileo Security accreditation Panel (GSAP) in June 2010 on the System-CDR (S-CDR) Panel 4 Documentation. This report has been written at the GSAP#10 meeting for the Galileo S-CDR Close-Out after the analysis of the S-CDR Panel 4 Documentation updated on the basis of the comments issued during the review process.
- Local Sites level
  - 12 inspections of Galileo ground stations have been successfully achieved with the support of the GSA, among which 11 were authorising deployment, integration and interconnection of classified equipment in test configuration, 1 authorising its connection to the Galileo operational system; 4 inspections were declared unsuccessful;
- Security Components level
  - Review of Component Security Targets
- PRS User Segment level
  - A preliminary definition of Protection Profile for PRS Security Module has been achieved and submitted to the review of the WG-PRS (see section 1.2.1).
- Management
  - 8 GSAP meeting have been organised and chaired by the GSA, each one with an average meeting time of 2,5 days, including four formations[22];
  - The Security Accreditation Board (SAB) has been formally established in December 2010, including the participation of Norway as European Free Trade Association State (EFTA) in the SAB and approval of SAB Rules of Procedure. In addition, first election of Chairperson and Deputy Chairperson have been organised in accordance with Article 16 of the Treaty on European Union (Qualified Majority Voting process)

[22] Plenary Session, Formation 1: System activities, Formation 2: Site activities, Formation 3: Components and crypto.

and core framework documents of the SAB were prepared and submitted for preliminary discussions;

- Extensive work has been done for setting-up as a matter of urgency a specific body of the Crypto Distribution Authority (CDA) called Flight Key Cell (FKC), which ensures the governmental confidence of all the Member States involved in the Galileo programme for the adequate handling of keys and crypto initialisation parameters ensuring the security of Galileo satellites, including security of communications with ground stations. Members of the FKC are the Member States hosting Galileo facilities supporting Flight Keys security operations (France, Germany, Italy) and the GSA;
- An expertise framework support contract has been awarded by the GSA to the company QinetiQ in December 2010. Due to GSA resource availability, performance of all the described tasks, especially the ones requiring in-depth technical competences, need specific technical support. This is expected to be achieved in particular through the means of this specific framework contract which will allow the GSA to fill the competences required to meet the accreditation goals.

Main issues and recommendations

Main difficulties encountered during the achievement of these tasks were the following:

- The GSA is subject to a transition phase due to the decision taken about transferring the GSA to Prague. This transition, making the 2011 quite uncertain in terms of planning, will make the management of the activities and resources more difficult (for example, it is likely that staff members will start looking for other jobs or leaving the agency).
- A new set of system security requirements (SSRS 3.9) has been approved during the last quarter of 2010. This version of the SSRS introduces new requirements for the system but also for the accreditation process, thus forcing a change “on the run” in the accreditation activities. This jeopardizes a part of the already achieved results and adds complexity to the management of the accreditation process and to the performance of the accreditation activities.
- The new GSA Regulation entered into force in November 2010 drastically changed the structure of the GSA, dramatically affecting in particular the accreditation process, roles and responsibilities. The new Security Accreditation Board, acting as the system accreditation authority, was set up and made operational at a very critical stage: the preparation of the first accreditation decision, the Authorisation To Launch (ATL). This adds complexity in managing the accreditation activities and the changes made to the process on the run;
- Budget and Human resources of the GSA are not adequate for fulfilling the ambitious objective of ensuring and demonstrating the security of the Galileo and EGNOS systems.

6.6.3. GNSS security requirements

Background

The GSA dedicated substantial efforts to coordinating the SSRS update process with national experts and ESA, starting from the SSRS 3.4 which was the applicable one in the IOV phase from 2003.

The SSRS versions 3.5 and 3.6 were approved by the Member States on 22 April and 14 November 2008, respectively but the SSRS 3.4 was still the one applicable to the Galileo programme.

Therefore, an MRD and SSRS Change Control Board Meeting was held on 12 November 2008 to discuss with ESA the implementation of the SSRS 3.6 proposed by the Member States and prepare an SSRS version 3.7 applicable to the Galileo programme to be attached to the delegation agreement[23] between the European Commission and ESA for the Galileo FOC procurement.

[23] Delegation agreement between the European Community and the European Space Agency on the further implementation of the European satellite radio-navigation programme Galileo

The GSA prepared a proposal for the SSRS 3.7[24], considered acceptable by ESA and by the Commission. The version 3.7 was considered as an intermediate step in the finalisation of the SSRS to be used for the FOC phase, so called SSRS 4.0, especially as some aspects of the proposal submitted by the Member States were not included in this version and still under discussion between ESA and the Commission. Main discrepancies were about the list of applicable and reference Documents, the GSMC concept and the Security Assurance Level.

Therefore, the work restarted under the initiative of the GSA in March 2009 which submitted to the Commission and to the Member States a new proposal for the SSRS 4.0, starting from the SSRS 3.6 which was the last version approved by the Member States.

It was a major step in the maturity of the SSRS evolution process as this proposal contained, compared to the 232 requirements of the SSRS 3.6, 307 new requirements and 39 changes. This proposal was in particular a way to solve the last discrepancies as mentioned here above. On the basis of this proposal, the Commission released a final version of the SSRS 3.7 applicable to the FOC phase in March 2009.

Objectives 2010

After approval by the EC of the SSRS 3.7, the Member States have nevertheless maintained for the rest of 2009 and in 2010 a recurrent activity (technically supported by the GSA) aiming at releasing an evolution of the SSRS 3.6 (actually the last version directly approved by Member States).

Achievements

This work converged in 2010 in coordination with the Commission, ESA, Member States and again with the support of the GSA through the approval of a new SSRS 3.9 dated on 8 September 2010 and approved by the GNSS SB.

Main issues and recommendations

An update of the SSRS based on an organised monitoring of Threats is recommended. The GSA has started as a part of its security accreditation activities a process for proposing regularly an update of the SSRS; first results should be available in 2011.

6.7. Research and Development in Security

6.7.1. Management of FP7 1st Call Contracts

Background

Contribution of the GSA to the FP7 first Call was limited to one contract on security and PRS which is the PROGRESS one. The PROGRESS[25] study (FP7 1st Call) is providing specification and standardization for PRS receivers and security architecture. In more details, the objects of the present study are:

- The implementation of the standardization, security and safety certification, security accreditation requirements and roadmap for PRS receivers;
- The definition of the functional analysis of the Security Modules of the PRS receivers and of the relevant security architecture and protection profiles;
- The assessment of the performance of the PRS receivers and the preparation of the development of PRS receivers prototypes;
- The provision of guidelines and recommendations for Industry and Member States for the development of PRS receivers.

This contract has been signed on 16 December 2008, kicked off on 23 January 2009 for duration of two years within a cost of 2,498,642.00 €; main tasks launched are:

- Establishment of European Standardisation Committees and fora;

[24] System-specific Security Requirement Statement for the Full Operational Capability Phase (S.S.R.S. – F.O.C.) Version 3.7, December 2008
[25] PROGRESS: PROgramme for Governmental Receivers

- Definition of preliminary performance specifications (MOPs);
- Definition of the technical and security requirements for PRS receivers and Security Modules (PRAMs);
- Definition of operating concepts and security requirements for PRS receivers;
- Elaboration of guidelines for security certification and accreditation of the PRS receivers and their Security Modules;
- Identification of requirements for receiver safety certification;
- Production of Interface Control Document (ICD) and Protection Profile (PP) for PRS Security Module;
- Assessment of the PRS receiver performances by simulations;
- Elaboration of a PRS Implementation Plan.

Achievements

A PROGRESS workshop was held on 16th June 2010, and a presentation of the benefits of standardisation has been given to the WG PRS.

Most of the PROGRESS deliverables have been made available during the year 2010, including mainly:

- Propositions for setting up Standardisation frameworks;
- Definition of preliminary performance specifications for the different expected PRS receiver application domains, and production of the corresponding MPS (Minimum Performance Standards);
- Production of standardisation documentation defining the technical and security requirements for PRS Receivers and Security Modules;
- Definition of operating concepts and security requirements for PRS receivers (CONcept of OPerationS, SECurity OPerating procedureS, System-specific Security Requirements Statements, System Interface Security Requirements Statements);
- Elaboration of guidelines focused on security certification and accreditation of the PRS receivers and their Security Modules and accreditation of the PRS-SM Manufacturers;
- Identification of the performance and regulatory requirements that the PRS receivers would have to fulfil for qualification in the frame of certification of safety applications;
- Production of Interface Control Document and Protection Profile for PRS Security Module;
- Assessment of PRS receiver performances by simulations;
- Elaboration of a PRS Implementation Plan identifying schedules for a timely development of the key PRS products and the conduct of the associated Standardisation and Certification process.

Main issues and recommendations

Lack of budget for launching a follow-up on preliminary results obtained through this contract.

6.7.2. Management of FP7 2nd Call Contracts

Background

For FP7 second call GSA prepared in the same field in 2008 the three following contracts that have been awarded and signed at the end of 2009:

- PROPHET[26] Simulator (GSA Framework 7 second call for Space procurement) will be an end-to-end simulation tool which simulates all the mechanisms of PRS management within the Galileo system. It should allow the assessment of key performance characteristics related to PRS access control policy (propagation duration of denial orders,…), modelling of the behaviour of the Galileo system from a PRS management point of view (including

[26] PROPHET: PRS Operations Performance Handy Evaluation Tool

robustness issues), assessment of PRS operational use cases and demonstration to member states, support for design optimisation of the system by evaluating the impact of some possible design evolutions on these performance characteristics. This contract has been signed on 10 November 2009, kicked off on 19 November 2009 for duration of 3 years within a cost of 2,750,000.00 €.

- The FORTRESS[27] study will provide a demonstrator of anti-tampering technologies. The need to develop and evaluate new technologies for the PRS Receivers' Security Module (SM) makes it essential to put in place a demonstrator on security technology, which would aim at the following objectives: securing the technological roadmap to have PRS receivers available by 2013, validating the feasibility of the critical security requirements (protection profile) produced in PROGRESS study, proving the technical feasibility of the implementation of security functions induced by PROGRESS, defining the security functions to be offered to Member States intending to develop PRS security modules. This contract has been signed on 16 December 2009, kicked off on 16 February 2010 for duration of 30 months within a cost of 3,998,895.91 €.
- The PROTECTOR[28] study: in several past studies (EuroGNSS, GSMC, PACIFIC), it has been highlighted that interferences and jamming are serious and realistic threats to existing and future GNSS. Moreover even GNSS services with enhanced robustness to these threats such as the Galileo PRS would only bring full benefits to users and European governments if they come together with interference and jamming monitoring capability. The roadmap for the User exploitation of PRS produced during the PACIFIC study advises the GSA that each Member State will have to define its approach and response to these threats and interference monitoring. It appears in recent discussions between GSA and Member States representatives that the Member States would like the GSMC to take care of the interference monitoring capability. Therefore, studies on an interference monitoring system dedicated to the detection and localisation of GNSS disruption sources to European users and in particular PRS users are of high interest. This contract has been signed on 5 February 2010, kicked off on 17 March 2010 for duration of 18 months within a cost of 1,000,000.00 €.

Achievements

These three contracts have provided during the year 2010 the results expected.

Main issues and recommendations

Lack of budget for launching a follow-up on preliminary results obtained through these contracts.

6.7.3. Launch of FP7 3rd Call Contracts

Background

In April 2010, GSA expressed its concerns to the EC[29] on risks about preparation of the FP7 3rd Call WP 2011 for what concern the support to the governmental applications of Galileo (PRS service implementation), as drafted and sent to the RTD before inter service consultation. Main issue was on the lack of specific topic opened through the FP7 3rd Call for Galileo governmental applications; PRS User Segment R&D activities were merged and diluted with professional and mass market, conducting to possible confusion on budget allocation and on the specificities of the procedure to be applied. GSA recommended revising this perspective by opening the use of the topic on Galileo governmental applications, with a dedicated budget, gathering all the PRS User Segment R&D activities. In addition, GSA recommended to use standard Grants and Tenders instead of cooperative projects for R&D activities associated to the PRS User Segment; for some projects, Tenders are mandatory if we want to drive and fund appropriately the industry, with the support of the EU MSs, while keeping the Intellectual Property Rights (IPRs) available at EU level for a progressive development of the PRS User Segment.

Achievements

[27] FORTRESS: FORge of Tamper-RESistant Security module
[28] PROTECTOR: PRS Operational Tool to Evaluate and Counteract Threats Originating from Radio-sources
[29] Letter ref. GSA/2010/0454243, Brussels, 28 April 2010

The EC replied positively to the concerns expressed by the GSA[30], asking the Agency to propose amendments of the FP7 WP2011 (3rd Call) before the 10th of June. Despite the very short notice, the GSA was able to propose a global roadmap[31] for the development of the PRS User Segment through the FP7 3rd Call, including 15 projects. These projects included 8 Tenders for an amount of 13.5 M€ and 7 Grants for an amount of 3.6 M€.

This proposal has not been retained by the EC except:

- one Tender (GALILEO.2011.3.1-1) for the development of "Integrated PMR (Professional Mobile Radio) and Galileo PRS receiver", with a budget reduced to 0.9 M€ instead of 2.5 M€ envisaged initially.
- Possibility for industry to apply for Collaborative Projects (Grants) associated to Technologies for PRS receivers (GALILEO.2011.3.1-2).

The GSA prepared on the basis of the agreed WP2011 for the FP7 3rd Call a Guide for Applicants including for the first time specific security rules and procedures for easing access of applicants to sensitive projects associated to the PRS.

Finally, a significant interest was demonstrated for the PRS Collaborative Projects and should be concluded in 2011 by the selection of at least 3 proposals with a corresponding budget of around 5 M€ (around 2.8 M€ funded by the EU, rest by industry).

In addition, an initiative was taken by the GSA to reinforce the cooperation with FP7 Security Projects (Security Calls) in order to propose synergy in particular for the development of critical technologies needed for PRS security modules embedded in the receivers. This cooperation should be concluded in 2011 by at least one topic covering this objective.

Main issues and recommendations

Lack of consideration for the proposals expressed by the GSA which has conducted mainly to the impossibility to drive industry towards ambitious objectives for the development of the PRS User Segment.

7. MARKET DEVELOPMENT

The Market Development achievements in 2010 are consistent with preparing the market for the commercialisation of EGNOS and Galileo services. More specifically, (1) defining and implementing EGNOS market entry strategy (Aviation, Road, Agriculture, Mapping, Maritime); (2) supporting the development of new satellite-navigation applications, through 20 FP7 1st call projects[32] and 29 FP7 2nd call projects[33] delivering concrete results, the preparation of the 3rd call; and (3) studying the evolution of key market segments and assessing their economic potential, public benefits, as well as EGNOS and Galileo added value.

7.1. EGNOS Market Entry

The EGNOS open signal was declared operational in 2009, the Safety-of-Life Service in March 2011. Therefore, as presented to the Administrative Board in a specific workshop in February 2011, the GSA put specific emphasis on the promotion of EGNOS, focusing on three market segments: Aviation, Road and Agriculture. The GSA developed for each of these market segments, a specific EGNOS market entry strategy, from which it derived an action plan, key performance indicators and a marketing communication plan. In addition, activities for the Mapping were also initiated and a market study for Maritime initiated.

[30] ENTR/F2/PV/JG D(2010) 308320, Brussels, 2 June 2010
[31] GSA Proposals on FP7 3rd Call Fostering the Security of the Galileo System and Applications, ref. GSA/2010/D454161, Brussels, 8 June 2010
[32] The FP7 1st call consisted of 7 procurement procedures resulting in service contracts, of which 6 projects were transferred to the European Commission; and 24 answers to call for proposals resulting in grant agreements, of which 5 were transferred to the European Commission.
[33] The FP7 2nd call consisted of 3 procurement procedures resulting in service contracts; and 26 answers to calls for proposals resulting in grant agreements.

7.1.1. Aviation

The GSA continually monitored and stimulated the development of key enablers for market adoption in cooperation with the Commission, EASA, ESSP and the Eurocontrol RNAV task force. The GSA continued to present the European level Cost Benefit Analysis for aviation to relevant opinion makers and at different industry fora such as the Small and Medium Airports Group (SMAG) event organised by Airport Council International.

A targeted marketing campaign included participation and presentations at different industry fora and events:

- Main sponsor of AERO EXPO, the largest general aviation fair in Friedrichshafen and of the ACI Regional Airports conference;
- Presence with a booth at the European Regional Airline Association general assembly and EBACE, the largest business aviation fair, in Geneva;
- Presentation of EGNOS aviation benefits at a dedicated EGNOS day organised by the Polish ministry of infrastructure with a very good attendance from the local industry; invitation to present EGNOS at the European Helicopter Emergency Medical Service conference in Switzerland.

A dedicated session on aviation benefits and adoption was also organised and animated during the Galileo Application Days. This session was well attended and appreciated by the attendees. NATS, the UK Air Navigation Service Provider, suggested having a dedicated day with other European ANSPs regarding implementation plans, which was subsequently organised in June in collaboration with the ESSP Yearly EGNOS service level day.

The GSA deepened the cooperation with navigation avionics manufacturers to reinforce the promotion of EGNOS through this important distribution channel. Both Garmin and Rockwell Collins participate in all aviation FP7 projects.

The August 2 failure to launch the Safety of Life service was an important drawback for the adoption. The aviation specific FP7 projects also got delayed because of this, since it was decided with the expert reviewer and Eurocontrol to perform all test flights without MT0 signal. A helicopter flight trial in the Spanish Pyrenees was recorded and the video is available on YouTube.

The results of the above actions are very promising. Major commercial aviation and general aviation opinion makers and other agents are starting to acknowledge the EGNOS value proposition. Several Member States (e.g., Spain, France, United Kingdom, Poland, Italy) have already announced plans to develop EGNOS-based approach procedures in the next 12-24 months.

7.1.2. Agriculture

The GSA developed a specific market entry plan for the Agriculture sector: EGNOS, with its "affordable precision" value proposition, is the right solution for a wide range of applications, allowing farmers who cannot afford expensive systems to benefit from the advantages of precision farming, for example, to reduce the use of pesticides and fertilisers and increase productivity.

A focused plan of actions to increase EGNOS adoption was defined and implemented. The market was carefully studied, cost-benefit analysis were performed, several initiatives were aimed at increasing awareness of EGNOS by opinion-makers, including the participation in major sector events.

The focus of these activities is increasingly focussing towards Central and Eastern European countries where the potential for EGNOS adoption is still comparatively high.

In 2010 the GSA continued with the implementation of the market entry approach, reaching successful results:

- Some of the most important GNSS device manufacturers for agriculture, like Trimble and Leica Geosystems, have introduced EGNOS-only entry level products. This allows more and more farmers to access affordable GNSS solutions for their tractors.
- The GSA established a key partnership with CLAAS, the European tractor manufacturer, who is supporting the EGNOS value proposition among the farmers. In addition, the GSA

established a good relation with leading tractor & receiver brands, supporting a worldwide leading tractor manufacturer in the introduction of its EGNOS product in early 2010.

- EGNOS market share among farmers using GNSS is over 55%. EGNOS consolidated the market leadership of GNSS solutions in Agriculture, as well as contributing to further market growth.

7.1.3. Road

The GSA developed a market entry strategy for the Road sector, suggesting that satellite navigation can enable a new traffic management approach, from "road saturation" to "network optimisation". (1) Satellite navigation strongly reduces the infrastructure investment required by conventional traffic management approaches and provides the best value for money solution for integrated network-wide management and network interoperability. (2) It provides the flexibility required by innovative dynamic road pricing schemes aimed at improving the efficiency of the road infrastructure and reducing the environmental impact of mobility. (3) EGNOS increases accuracy, and integrity information can enhance the performance and the confidence in the position by public authorities and end users.

In 2010 the GSA launched actions to promote the use of GNSS and EGNOS in the Road segment. These actions have been based on the following pillars: market analyses (e.g., effects and opportunities of the EETS decision, innovative road pricing schemes), market campaigns and direct marketing to decision makers, trials to demonstrate the EGNOS benefits and R&D projects to lower barriers or fill gaps of enablers of adoption.

The main achievements obtained in 2010 are:

- The market analysis has been completed and included in the GNSS Market Report published by the GSA. The Road market segment confirmed to be, for GNSS, one of the most relevant in terms of revenues and public benefits, such as fuel and travel time saving and increased road safety.
- An EGNOS trail has been performed by one of the major European road pricing service provider. The conclusion has been that EGNOS, thanks to the increased accuracy and the availability above expectations, will be considered for the next generation of road pricing system based on GNSS. The encouraging results have been presented at the ITS World Congress in October 2010.
- The GSA realised, in cooperation with experts and major stakeholders, a cost benefit analysis to quantify GNSS and EGNOS value added in Road Network Management initiatives, such as innovative road pricing schemes. The preliminary cost benefit analysis has been applied on a new motorway under construction and will be enhanced in 2011 to become a tool at disposal of public authorities evaluating road pricing initiatives.
- The FP7 projects in Road areas have been driven and coached in order to obtain the maximum tangible effect on EGNOS adoption and in preparing the way of Galileo adoption, with excellent results. As an example, the project SCUTUM started in October a standardisation action for EGNOS/EDAS in dangerous goods tracking and other ITS applications, by means of a CEN agreement.
- A partnership with a leading service provider in road pricing and with one of the largest European road operators was established. In addition, the National Authorities part of the "Stockholm Group", particularly interested in innovative road pricing and ITS solutions, have been informed directly about the EGNOS value proposition and trial results.

7.1.4. Mapping

Mapping is the newest segment in which EGNOS potential is explored. GNSS provides an efficient technology for Mapping and is widely used by organisations such as utility companies as well as regional and local authorities.

Mapping often requires services with centimetre level accuracy and substantial costs. It can also require significant investment in infrastructure for service providers or regional authorities as well as complex and costly equipment and software solutions for professionals.

Now EGNOS can contribute in growing the use of GNSS in real time mapping solutions by providing free accuracy that is widely available (without need for any infrastructure).

The main achievements are:

- Study on EGNOS benefits in Mapping was completed and enabled the definition of an overall market strategy, the value proposition and the identification of key targets.
- Go-to market approach was developed and initially launched during InterGeo (Cologne) where first market study findings were confirmed.
- Cooperation with CLGE (Council of European Geodetic Surveyors) strengthened:
  - Joint EGNOS survey published with first positive results
  - Working sessions with CLGE members planned for early 2011

7.1.5. Maritime

A market entry study was initiated in order to analyse potential target segments of EGNOS.

7.2. EDAS

With smooth handover to the Commission as of April 2010, EDAS enhancements on system level and service and its implementation according to user needs have been recommended. The implementation of these enhancements has been launched by the EC to the EGNOS operator. The GSA continues to support EC activities as needed.

7.3. Market Monitoring

The GSA is monitoring the GNSS market on a continuous basis with the market monitoring and forecasting process (MMFP). This is meant to support the EC Action Plan and other public and private interested parties with market data.

The process consists of three key components:

- Monitoring the key sources of information on the current state of the main GNSS market segments and on the evolution of the main drivers per segment;
- A set of assumptions, from leading experts of different segments, for assessing market trends and different market evolution scenarios.
- Two complementary economic models that forecast the evolution of the satellite-navigation market and assess the positive externalities (public benefits) that may be created by the use of satellite-navigation.

In October 2010 first issue of GNSS market report has been published. The report contains main results from the market analysis of GNSS application in 4 sectors: aviation, agriculture, LBS and road. In December 2010 GSA kicked off several studies, aiming at extending the current model with 3 new segments: maritime, PRS and surveying.

7.4. International Activities

As the Commission decided to take over the international activities on China and Israel from GSA from January 1st 2010, GSA activities in these areas were limited to supporting the Commission and ensuring an effective transition.

7.4.1. Latin America

The LATINO project[34] was completed and delivered the recommendations and handover file to prepare the continuation of the Galileo Information Centre with either the current or a new contractor. The preparation of the handover file includes delivering the relevant background information (e.g., list of activities, website administration, contact lists, final report, financial

[34] LATINO is a service contract for the maintenance of the Galileo Information Centre for Latin America.

information from previous activities) that will ensure equal opportunities for the tenderers and facilitate the operation by the (new) contractor.

7.4.2. Israel

Activities on cooperation with Israel were transferred to the EC in 2010. GIUS-2 selected projects were successfully launched by MATIMOP. IPR regime for GIUS-1 proposals was extended to GIUS-2.

7.4.3. China

No activities by GSA.

7.4.4. Africa

On request of the Commission, the GSA established an expert group on GNSS in Africa to support the EC in defining their African policy.

The GSA also followed up on the MEDA-1 contract, and evaluated with EC the quality of the deliverables and requested the remaining items, which ESA then delivered, in order to close this contract. The MEDA-2 contract was transferred to the EC.

8. RESEARCH & DEVELOPMENT

The FP7 activities are managed by the GSA under delegation of the European Commission.

The GSA has been continually innovating in the management of the R&D activities in order to maximize the value of the FP portfolio and, consequently, the return on the EU invested funds, while spurring the competitiveness of the European industry. GSA is delivering a monthly update on FP7 activities to the EC since July 2010.

There are already concrete results in terms of pre-commercial products, prototypes, open source software a collaboration centre coming from the 1st Call with more results from the 2nd Call expected for 2011.

8.1. FP7 1st Call

8.1.1. FP7 1st call overview

The call for proposals was published in mid-November 2007 and all the contracts had been awarded by the end of 2008.

The FP7 1st call has a budget of €42.4 million, including a direct delegation of €15 million to ESA for EGNOS certification activities. Out of the residual budget, €19.4 million was allocated for collaborative projects (CP); €7.5 million was allocated for tender projects (T) and the remaining €0.5 million was allocated to administrative support.

Table 2 shows the areas covered by the FP7 1st call.

Table 2: Overview of FP7 1st call areas

Activity	Topic	CP/T	Number of proposals/ offers submitted
Exploiting the full potential	Innovative GNSS-based Road applications	CP	8
	Innovative GNSS-based Mobile LBS applications	CP	8

	Accelerating EGNOS adoption in aviation	CP	6
	Open call for focussed innovative projects in mass market applications (dedicated call for SMEs)	CP	26
Preparing the tools and creating the appropriate environment	Service consolidation	T	3
	Test-bed and simulators	T	5
	Standardisation	T	1
	Security related standardisation and certification	T	1
Adapting receivers to requirements and updating core technologies	Mass market receiver	CP	5
Supporting infrastructure evolution	GSA support	Support action	2
	International activities	CP	10
	GNSS Evolution	T	3
	Evolution of code and navigation message	T	2
	Frequency support	T	3

Sixty-five collaborative project proposals were submitted and twenty-four collaborative projects were finally selected for funding.

A total number of eighteen offers were submitted for the seven published tenders (one hundred per cent funding from the GSA) of the FP7 1st call. Seven offers were selected for funding.

The negotiation and signature of grants for collaborative projects and of contracts for tenders was concluded in the first half of December 2008. All FP7 1st call projects were kicked-off early 2009 and received pre-financing, and were active in 2010.

The technical and administrative review processes were in place, involving external reviewers, to keep projects on track.

In 2010, 7 projects led by SMEs and 2 projects on international cooperation were successfully closed, delivering:

- 5 pre-commercial products for logistics (GALAPAGOS), robotics (MOW BY SAT), e-health (IEGLO), location based access control system (TIGER) and a smartphone application for tourism (IMAGEO).
- 2 prototypes in road user charging (SIGNATURE) and road safety (GSW) domains.
- 1 open source EGNOS software library (SIGNATURE).
- 1 International collaboration center on GNSS for EU-South East Asia (SEAGAL).

A detailed overview of the FP7 1st call projects is given in Annex 4.

8.2. FP7 2nd Call

8.2.1. FP7 2nd call overview

The call for proposals was published in mid-December 2008 and all contracts had been awarded by the end of 2009.

The FP7 2nd call has a budget of €34.5 million. The amount allocated for collaborative projects (CP) is €25.1 million; a budget of €7.7 million is dedicated to tenders (T) and the residual budget

of €1.7 million is allocated to administrative support, communication, results dissemination and independent experts.

Table 3 shows the areas covered by the FP7 2nd call.

Table 3: Overview of FP7 2nd call areas

Activity	Area	Topic	CP/T	Number of proposals / offers submitted
Exploiting the full potential	Mass Market Applications	Use of EGNOS services for mass market: road telematics	CP	10
		Use of EGNOS services for mass market: innovative applications targeted to SMEs	CP	24
	Professional Applications	Use of EGNOS for professional applications: Fleet management and logistics applications and high precision applications including agriculture	CP	12
	Scientific Applications	Galileo and EGNOS for scientific applications	CP	8
	Safety-of –Life Applications	Use of EGNOS for Safety-of –Life applications	CP	9
	New and innovative Applications and Services	LBS: Applications with social/public benefits	CP	12
	Search and Rescue Applications	SAR Services	CP	1
Preparing the tools and creating the appropriate environment	Tools	Simulators and Tools	T	2
		PRS Management simulator	T	3
		Interference and jamming monitoring (PRS and non-PRS)	T	5
Adapting receivers to requirements and updating core technologies	Receivers	Professional receivers (advanced receivers)	CP	10
Supporting infrastructure evolution	International cooperation and awareness	International activities and EGNOS service extension	CP	10
		Support to Education in GNSS, Support to Research and Innovation in GNSS	CP	8

104 collaborative project proposals were submitted and twenty-nine collaborative projects were finally selected for funding on the basis of grant agreements. In addition to that three service contracts, resulting from tender procedures and receiving 100 per cent FP7 2nd call funding, were concluded. A total number of ten offers were submitted for these three published tenders.

The negotiation and signature of grants for collaborative projects was concluded in December 2009. All FP7 2nd call projects were kicked-off early 2010 and received pre-financing. All projects are ongoing, most of them have successfully completed the design activities and have successfully passed the preliminary design review.

The review process in place, with 50 independent experts, covering technical and business activities, to keep projects on track. Monthly reporting to EC on project status and plans is delivered since March 2010.

8.2.2. FP7 2nd call projects

A detailed overview of the FP7 2nd call projects is given in Annex 4.

8.3. FP7 3rd Call

8.3.1. FP7 3rd call overview

The call for proposals was published on 20 July 2010.

The FP7 3rd call has a budget of €38 million. The amount allocated for collaborative projects (CP) is €30.5 million (including receivers topic managed by DG ENTR); a budget of €6.7 million is dedicated to tenders (T) and the residual budget of €1 million is allocated to administrative support, communication, results dissemination and independent experts. For the first time, classified proposals on PRS receivers were accepted, and an appropriate methodology was put in place.

There was a 2-stage call for small projects targeting SMEs. The deadline for the 1st stage was 5th October 2010, and 13th Jan 2011 for the second stage. Evaluation of the first stage was completed in October 2010. The deadline for all the other topics was 16 December 2010.

The Brussels Info Day, held in Brussels on September 22nd, attracted over 500 participants. In addition, GSA participated at 10 National/Regional info days, transferring first hand information on the call.

Table 4 shows the areas covered by the FP7 3nd call.

Table 4: Overview of FP7 3rd call areas

Activity	Area	Topic	CP/T	Number of proposals / offers submitted
Exploiting the full potential	Professional Applications	Use of EGNOS and early GALILEO services [including PRS] for professional applications	CP	24
	Scientific Applications	Use of Galileo and EGNOS for scientific applications and innovative applications in new domains	CP	11
	Safety-of-Life Applications	Use of EGNOS and Galileo for SoL applications for all transport modes	CP	13
	New and innovative applications and services	Use of Galileo and EGNOS services for mass market and in niche sectors [including PRS applications], to be mainly provided by SMEs	CP	76
Adapting	Receivers	PRS Receiver Technologies	CP	7

Activity	Area	Topic	CP/T	Number of proposals / offers submitted
receivers to requirements and upgrading core technologies				
Supporting infrastructure evolution	User needs and mission evolution	Networks of excellence with universities and research institutes and user fora	CSA-C	5
	International co-operation and awareness	International activities	CP and CSA-C	14

8.4. Coordination of R&D Activities between the GSA and ESA

The GSA is working closely with the ESA Technology Transfer Programme team on many marketing activities (e.g., Galileo Application Days, European Satellite Navigation Competition). The GSA is no longer directly involved in R&D coordination because as the task has been transferred to Commission. The GSA provided detailed information on ongoing FP7 1st call projects to ESA in 2009 and was also invited to ESA GNSS evolutions workshops. Due to a conflict of interest ESA did not participate in the evaluation of the FP7 2nd call. ESA was invited to participate in the evaluation of FP7 3rd call.

9. COMMUNICATION AND INFORMATION

In 2010 the GSA implemented a range of targeted communications actions and initiatives that aimed to fulfil the objectives and strategies set out in the 2010 Communications Plan.

9.1. EGNOS Promotion and Market Communication

2010 was the biggest year yet for GSA activity in the communication of EGNOS. A Communications plan was elaborated and the following key actions were implemented:

9.1.1. EGNOS Portal

On request of the Commission, the GSA developed and launched the 'EGNOS Information Portal' (www.egnos-portal.eu) in March 2010, which brings together information and resources to promote EGNOS and provide the information and tools needed by EGNOS users and application developers for a range of market sectors.

The EGNOS Portal also includes sectoral information pages, where a range of documents, links and videos are available that address EGNOS use in specific target sectors. In addition, a frequently updated 'News Service' is available that covers a range of topics including EGNOS at events, 'EGNOS in FP7' project milestones, EGNOS application success stories, EGNOS programmes updates, and more. A total of 58 news stories were added to the EGNOS Portal in 2010.

In order to drive access to the EGNOS Portal, the URL is used on all new EGNOS communications materials (brochures, event stands, press releases, etc.) and relevant organisations, projects and stakeholders are encouraged to provide a link to the site. In addition, in 2010 three 'EGNOS Portal' electronic newsletters, providing access to newly added site content and recent news, were produced and sent to a growing number of subscribers.

9.1.2. EGNOS sector-specific market communication campaigns

In 2010 three sector-specific market communication campaigns to promote the awareness and use of EGNOS were continued and expanded for the Precision Agriculture, Aviation and Road sectors and a forth market campaign was launched for Mapping/Surveying sector.

Ø Agriculture

The Precision Agriculture communication campaign continued with EGNOS promoted at the 2010 DLG Field Days event in Hanover, Germany, one of the largest precision farming events in Europe. The 'EGNOS for Agriculture' exhibition stand was presented as part of a co-promotion with CLAAS, one of the largest European farming equipment and technology providers. Presence included ongoing presentations, showing of the 'EGNOS for Agriculture' video, several press briefings, the production of the 'EGNOS for Agriculture' brochure and posters in German and Polish, and the production of EGNOS/Agriculture lapel pins. Information and materials can be found at: http://www.egnos-portal.eu/users/agriculture.

Ø Aviation

The EGNOS communications campaign targeted toward the Aviation community continued and expanded. The 'EGNOS for Aviation' stand and communication message was presented at the following events in 2010:

- The ACI Small and Medium Airport Group conference in Dubrovnik, Croatia
- Aero Friedrichshafen, the largest general aviation event in Europe
- EBACE (the European Business Aviation Conference and exhibition), held in Geneva,
- The ERA (European Regional Airlines Association) annual conference and exhibition, held in Barcelona

New and revised information materials supported the 2010 campaign including: a short version (3-minute) of the original (9-minute) 'EGNOS for Aviation' video clip, placement of the 'EGNOS for Aviation' advertisement in event programmes and magazines, updated leaflets and fact sheets, the production of portable 'EGNOS for Aviation' pop-up panels and the production of EGNOS/Aviation lapel pins. Information and materials can be found at: http://www.egnos-portal.eu/users/aviation

Ø Road

The 'EGNOS for Road User Charging' campaign continued with EGNOS Sponsorship of the 2010 ASECAP Days (the annual event for the 'European Association of tolled motorways, bridges and tunnels' the major voice in Europe for the sector) held in Oslo. EGNOS presence included broad logo exposure, presentations and the production of a new 'EGNOS for Road user charging' stand and brochure and the production of EGNOS/Road lapel pins. The broader EGNOS for the Road (including EGNOS application in intelligent transport systems (ITS) was delivered at the TRA (Transport Research Arena) event in Brussels. EGNOS was present in a stand, conference presentations and via FP project demonstrations. Information and materials can be found at: http://www.egnos-portal.eu/users/road

Ø Mapping

Another aspect of promoting EGNOS to the high precision market, the 'EGNOS for Mapping' campaign kicked off this year at Intergeo - the world's largest event and communication platform for geodesy, geoinformation and land management - held in Cologne, Germany. A new 'EGNOS for Mapping' stand and leaflet was produced. Information and materials can be found at: http://egnos-portal.gsa.europa.eu/users/mapping

9.2. GSA Website and Newsletter

The GSA continued to build its website, adding 62 news stories in 2010 covering a range of issues from research project results to programme updates and to event coverage. News information from the website was further distributed via the GSA's electronic newsletter, 'European GNSS Market News', which was distributed on three occasions in 2010 to a mailing list of over 2,000 addresses. The GSA website was also improved this year by the addition of FP7 projects to the FP project database, as well as the addition of a range of new documents, multimedia and press releases.

9.3. Special Events

9.3.1. GALILEO Application Days

From 3-5 March 2010, the GSA organized for the first time the 'Galileo Applications Days' event which included a conference, exhibition and unique outdoor 'Application Village' in Brussels. The event was seen as successful and generated significant positive visibility, including wide press coverage for European GNSS Programmes during a challenging period. The purpose of the event was to bring together a range of European and national initiative aiming to support the development of GNSS applications (FP7, the European Satellite Navigation Programme 'ESNC', the ESA Technology Transfer Programme, etc.) The event also served as the official 2010 kick-ff event for the ESNC. The event featured:

- 1170 registered participants from 45 countries
- 150 lectures in keynote plenary and six focus sessions: LBS, Social & Public Services, Aviation, Road, High Precision & Technologies for Applications
- 32 live demonstrations of innovative GNSS applications in the Application Village
- 30 project presentations in the exhibition area;
- Venture Academy, special session for GNSS educators and students, and presentation coaching
- Roundtable discussions, business matchmakings, elevator pitches, networking sessions, a 'Galileo Concert' and much more.

9.3.2. Growing GALILEO 2010

The GSA organized 'Growing Galileo 2010' (the 3rd event in the 'Growing Galileo' series), in September in Brussels. It focused on the funding opportunities for satellite navigation project proposals available under the FP7 3rd call. Approximately 500 people attended the two-day event.

9.3.3. 2010 European Satellite Navigation Competition

In 2010 the GSA once again participated as "Cooperation Partner" in the Galileo Masters (European Satellite Navigation Competition) The GSA offered a Special Topic Prize for the 'most promising EGNOS application idea'.

The competition had its kick-off during 'Galileo Application Days' in March and in October, the GSA awarded its 4th EGNOS Application Prize at the ESNC Award Ceremony in Munich. The GSA's involvement in the 'Galileo Masters', along with its 'Special Topic Prize' continues to bring the GSA significant positive contacts, publicity and recognition as one of the key players in GNSS application development and a key EGNOS Partner.

The winners of the 2010 GSA's ESNC Special Topic Prize for the most promising EGNOS application was Austrian company, Mobilizy, for their augmented reality, Wikitude Drive, system for personal navigation. After winning the GSA prize, Mobilizy then went on to win the 2010 ESNC Grand Prize as well as the Navtec LBS challenge.

9.4. Knowledge Management

Access to public documents on the GKMF (GNSS Knowledge Management Facility) was opened via the GSA website's 'Virtual Library' in 2009 to coincide with the 2nd Growing Galileo event. The GSA Virtual Library continues to provide a single on-line access point to thousands of important files and documents related to the European GNSS R&D programmes. An easy-to-use computer interface allows simple or advanced searches via the internet on Galileo and EGNOS-related information and research projects.

In 2010 a range of new documents, images and other reference materials were added on a regular basis. The Virtual Library can be accessed here:

http://www.gsa.europa.eu/go/galileo/the-gsa-virtual-library

10. OTHER ACTIVITIES

10.1. Legal and Institutional Activities

The GSA Legal Department was entrusted with all procurement and contract management activities and continued to provide legal support to other GSA departments. Thus, most of its activities are already included in other sections of this report. The following activities shall be highlighted:

10.1.1. GSA procurement

The procurement activities managed in 2010 can be summarized as follows:

- Sixty five purchase orders corresponding to an overall amount of approximately €900,000;
- Six negotiated procedures corresponding to an overall amount of €470,000;
- Three open calls[35] corresponding to an overall amount of €9,400,000;

10.1.2. GSA contracts

Contract management activities in 2010 can be summarized as follows:

- 45 active grants and 4 active contracts at the end of 2010.
- Other pending contracts:
  - PACIFIC
  - MATIMOP
  - TEN-T-2005 EUROCONTROL
  - PROGENY
- Grants and contracts which were successfully closed after approval of the final reports and final payments:
  - 2 grant agreements of the FP7 1st call (IEGLO and MOW-BY-SAT);
- Expert contracts. 29 expert reviewers
- FP7 grants awarded or signed:
  - FP7 2nd call (total €25 million) signed in 2010;
  - Expert contracts. 29 expert reviewers contracts signed

10.1.3. GSA framework documents

The Legal Department helped in the drafting of framework documents (e.g., work programme; annual activity report) in view of maintaining the GSA legal framework and in its support capacity to the Administrative Board.

10.1.4. Transfer of assets

The GSA continued its effort to transfer assets to the Commission as globally initiated by a decision of the Administrative Board in March 2009. The particular transfer of EDAS related activities and assets was requested by the Commission in its letter to the GSA dated 14 June 2010 which the GSA agreed with in its letter of 6 September 2010, requesting the acceptance of the identified assets. The decision of acceptance was pending at the end of 2010, expected to take place early 2011.

[35] (1) PROTECTOR (Security area - launched in 2009, concluded in 2010); (2) Provision of support to the GSA in the analysis, modelling and implementation of actions towards the GNSS markets – 3 lots (Market Development area); (3) GSA IT Support (ICT-Logistics area).

The GSA investigated the state of activities by ESA under MATIMOP and Official Requests (OR) under the Agreement on ESA Technical Support to GJU GNSS Activities, both assigned to the GSA by the GJU. While meetings and letters in both regards were sent to ESA, the information the GSA received in reply until the end of 2010 did not yet allow a conclusion. The GSA continues to investigate with ESA. Judging from the state of play at the end of 2010 the GSA expects to use the payment appropriations it received on MATIMOP for paying the invoice by ESA for the performance of infrastructure procurements; ESA's invoices for activities under OR#7 are not likely to be paid in whole, eventually leaving appropriations to be transferred to the Commission.

10.1.5. Review of contract management and procurement

The GSA Legal Department spent considerable efforts on the identification and reduction of risks related to contracts management and procurement processes (see also Point 6.2 below).

10.2. Contract Information System (CIS)

One of the key tools for the management of contracts identified during the previous years was a Contract Information System (CIS). A special working group was created in order to identify the requirements and the most effective solution. The final approved report of the group suggested to implement an EC system called ABAC Contracts because this application provides a very good link with other financial systems used by the Agency. However, it lacks some functionality necessary for the daily operational contract management namely in the area of FP7 contracts with many deliverables and complex payment plans. Therefore, a task to develop an additional application providing this functionality remains in our plan for 2011. Finally, ABAC Contracts was ready for use in December 2010 with the objective to fill the database with reliable data during the first quarter of 2011.

10.3. Information System / Information Technology

The GSA continued to make the most of the available infrastructure and services provided by DG DIGIT in the current offices for cost efficiency reasons. There were no unplanned outages of our information systems. The performance of them exceeds expectations taking into account very low system administration and maintenance resources. The systems hosted by DG DIGIT in the EC Data Centre are performing well but we were not very satisfied with the relatively high costs and lack of flexibility in terms of change management. This issue was addressed in the tender specifications for the GSA IT support (see below).

Significant progress in 2010 was reached in the following areas:

- Information systems for processing of EU Classified Information called GRUE (GSA Restreint UE Environment, a secure isolated network of 15 workstations) and GSUE (GSA Secret UE Environment, three standalone TEMPEST computers) were technically finalized and are fully operational in testing mode awaiting the official act of a formal accreditation.
- Hosting of the EGNOS Portal was arranged with DG DIGIT and the application was successfully transferred to the new environment
- A suitable solution for the Human Resources Information System (HR IS) was finally identified - Allegro software by AdequaSys France. This will be implemented in collaboration with two other EU Agencies (EIGE and OSHA) because of financial efficiency.
- Increase of the capacity of the IT service
    - a new ICT & Logistics department was created outside the Finance department and its head now reports directly to the Executive Director
    - a new ICT & Logistics Operations Officer was recruited and started in November 2011
    - an open call for tenders for the provision of General IT Support to the GSA was successfully launched, completed and a new contractor selected. The award decision was signed on 17/01/2011. The actual execution of the contract started in March 2011. This contract will generate direct savings on the IT costs already in 2011 by the integration of the GSA and GKMF helpdesks with a potential to reach

further savings in the coming years. We now also have all the IT resources that we were lacking for several years.

With all these changes, the overall capacity of the IT service has significantly increased while the internal resources are still on a reasonably low level. It is a very important achievement before the relocation of the GSA seat to Prague and the setup of the two GSMC because all these sites will need a new technical infrastructure.

10.4. Data protection

The GSA continued improving and implementing the data protection structure.

10.5. Relocation to Prague, Saint-Germain-en-Laye and Swanwick

On 10 December 2010 the EU Council adopted the decision 2010/803/EU on the location of the seat of the GSA in Prague, Czech Republic. As the first step of the implementation of the decision, the GSA created a special task force with the following mandate which covers also the GSMC sites:

- § prepare hosting agreements between the GSA and the hosting entities (Czech Republic for GSA HQ, France and UK for GSMC);
- § prepare the roadmaps for the relocation of the GSA to Prague, Saint-Germain-en-Laye and Swanwick;

Based on these documents, the GSA will determine its budgetary needs for the relocation operation and for the future operations in the Czech Republic, France and UK.

11. DECLARATION OF ASSURANCE OF THE EXECUTIVE DIRECTOR

- § Declaration of Assurance of the Executive Director, covering the period from 1st January 2010 to 30th June 2010 – See Annex 1
- § Declaration of Assurance of the Executive Director, covering the period from 1st July 2010 to 31st December 2010 – See Annex 2

ANNEX 1

Declaration of Assurance of the Executive Director from 1st January 2010 to 30th June 2010

European GNSS Supervisory Authority

The Executive Director

Brussels, 29 June 2010
GSA(2010)/OED/FIN/D/498577

Declaration of Assurance of the Executive Director

Re: Status of the Accounts of the European GNSS Supervisory Authority as of 30 June 2010

I, the undersigned, Executive Director of the European GNSS Supervisory Authority (hereafter "the Authority"), in my capacity as Authorising Officer,

- state that I have reasonable assurance that the resources assigned to the activities as defined in the GSA work programme 2010 and in the delegations given to the GSA, have been used for their intended purpose and in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees concerning the legality and regularity of the transactions that took place in the first half of 2010. This reasonable assurance is based on my own judgment and on the information at my disposal, such as the results of the ex-ante and ex-post controls and
- confirm that I am not aware of any matter not reported in this declaration that could harm the interests of the Authority or the institutions in general;
- state that no provisional accounts for the first half of 2010 have been prepared and that this declaration, which is made to the best of my knowledge, covers the information on transactions relating to the period when I was Executive Director in 2010.

Pedro Pedreira

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Website: wwww.gsa.europa.eu

ANNEX 2

Declaration of Assurance of the Executive Director
from 1st July 2010 to 31st December 2010

European GNSS Agency

Acting Executive Director

Brussels, 25 January 2011
GSA/2010/FIN/OED/D497080

Declaration of Assurance of the Executive Director

Re: Status of the Accounts of the European GNSS Agency as of 31 December 2010

I, the undersigned, Acting Executive Director of the European GNSS Agency (hereafter "the Agency"), in my capacity as Authorising Officer and to the best of my knowledge,

- state that I have reasonable assurance that the resources assigned to the activities as defined in the GSA work programme 2010 and in the delegations given to the GSA, have been used for their intended purpose and in accordance with the principles of sound financial management, and that the control procedures put in place give the necessary guarantees concerning the legality and regularity of the transactions that took place in the second half of 2010. This reasonable assurance is based on my own judgment and on the information at my disposal, such as the results of the ex-ante and ex-post controls; and
- confirm that I am not aware of any matter not reported in this declaration that could harm the interests of the Agency or the institutions in general;
- state that no provisional accounts for the 2010 have been prepared and that this declaration, which is made to the best of my knowledge, covers the information on transactions relating to the period when I was Acting Executive Director in 2010.

Heike Wieland (Ms)

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ANNEX 3

Report on Budgetary and Financial Management in 2010

REPORT ON BUDGETARY AND FINANCIAL MANAGEMENT IN 2010

1. INTRODUCTION

The purpose of this report is to present a synthesis of the budgetary and financial management of appropriations managed by the European GNSS Agency (GSA) in 2010.

1.1 LEGAL BASIS

Article 76 of the GSA Financial Regulation stipulates that the accounts of the Agency shall be accompanied by a "report on budgetary and financial management during the year".

1.2 CONTENT OF THE 2010 REPORT

This report is has five chapters.

Chapter 1 summarises the stages of the budgetary procedure 2010, from the budget requested by the Agency to the voted budget made available at the beginning of the year 2010.

Chapter 2 describes the evolution of the total authorised appropriations during the financial year, in particular the main adjustments made to the voted budget (carry-overs, amending budgets, transfers) and the reasons for these adjustments. This chapter includes the appropriations arising from earmarked revenue.

Chapter 3 analyses the budget implementation per budget title.

Chapter 4 presents an analysis of the evolution outstanding commitments.

Chapter 5 concludes the report by summarising the budgetary implications of the transfer of activities from the GSA to the European Commission.

2. CHAPTER 1 – ESTABLISHING THE BUDGET 2010

FROM THE PRELIMINARY DRAFT BUDGET TO THE VOTED BUDGET

Table 1: Evolution of the Agency's budget 2010 – commitment and payment appropriations are identical – figures in €

(See next page)

Budget line	Heading	Requested by the Agency	PDB 2010 presented by the Commission	Budget 2010 voted by Parliament and Council
	REVENUE			
2000	Operating subsidy from the Commission	9,960,000	7,890,000	7,890,000
	Total revenue	9,960,000	7,890,000	7,890,000
	EXPENDITURE			
	Title 1 - Staff			
1100	Staff expenditure	4,160,000	3,760,000	3,650,000
1200	Recruitment costs	220,000	140,000	80,000
1300	Missions and travel	300,000	270,000	270,000
1400	Training expenditure	100,000	80,000	80,000
1700	Representation expenditure	20,000	20,000	10,000
	Total for title 1	4,800,000	4,270,000	4,090,000
	Title 2 - Administrative expenditure			
2000	Rental of buildings	610,000	550,000	590,000
2100	Data processing	590,000	510,000	530,000
2200	Movable property	30,000	30,000	10,000
2300	Current administrative costs	220,000	170,000	130,000
2400	Postage and telecommunication costs	p.m.	p.m.	20,000
2500	Expenditure on meetings	190,000	160,000	120,000
2600	Other administrative expenditure	p.m.	p.m.	p.m.
	Total for title 2	1,640,000	1,420,000	1,400,000
	Total for titles 1 and 2	6,440,000	5,690,000	5,490,000
	Title 3 - Operational expenditure			
3100	Expenditure on studies	3,420,000	2,100,000	2,350,000
3200	Publication and translation costs	100,000	100,000	50,000
	Sub-total for lines 3100 and 3200	3,520,000	2,200,000	2,400,000
	Total expenditure	9,960,000	7,890,000	7,890,000

On 10 February 2009, the GSA communicated to the Commission its budgetary needs in the form of a fiche financière. Following this, the Commission communicated to the GSA informally a downward adjustment of €2,070,000 to the initially requested budget. The Administrative Board approved the Draft Estimate of Revenue and Expenditure for 2010, which equalled the Commission's PDB, on 19 March 2009.

After the second reading, the Budgetary Authority finally established the 2010 subsidy for the Agency at €7,890,000, split into €5,490,000 for administrative expenses and €2,400,000 for operational expenses.

3. CHAPTER 2 – EVOLUTION OF THE BUDGET

3.1 OVERVIEW

The changes of the Agency's budget 2010 that took place during the year are summarised in Table 2.

The budget underwent one amendment by the Administrative Board described in detail in section 3 of this chapter. Additionally, by decision of the Executive Director, two transfers were made from one budget line to another as detailed in section 4.

Also in the context of the delegation received from the European Commission for the implementation of the 7th Framework Programme of R&D (FP7), the budget had to be amended to include the amount of appropriations made available by the Commission. This is detailed in section 5 of this chapter, presenting the final authorised appropriations of the year 2010.

The final amount of subsidy made available to the Agency was €7,890,000. The Agency also received further €7,162,833 from the European Commission under the delegation for the implementation of 7th Framework Programme.

3.2 CARRY-OVERS FROM 2010 TO 2011

In accordance with Article 10, paragraphs 1 and 4 of the GSA Financial Regulation, payment appropriations in the amount of €1,262,000 were carried over to 2011. This non-automatic carry-over was approved by the GSA Administrative Board on 7 February 2011, through written procedure. The purpose of this non-automatic carry-over was to maintain the GSA's payment capacity on existing legal obligations and on the future legal obligations to be entered into during 2011 related to budget line 3100 "Expenditure on studies".

(See next page)

Budget line	Heading	Adopted budget 2010 (AB21) 19/11/09		*Transfer 1/2010 (15/06/10)*		Budget 2010 after Transfer 01/2010		*1st Amendment (AB25) 23/06/10*		1st Amending Budget	
		CA	PA	*CA*	*PA*	CA	PA	*CA*	*PA*	CA	PA
	REVENUE										
2000	Operating subsidy from the Commission	7,890,000				7,890,000			*800,000*	8,690,000	
2008	Operational funds from the Commission										
2009	Transfer from the Galileo Joint Undertaking										
9000	Miscellaneous revenue										
	Total revenue	**7,890,000**				**7,890,000**			**800,000**	**8,690,000**	
	EXPENDITURE										
	Title 1 - Staff										
1100	Staff expenditure	3,650,000	3,650,000	*-150,000*	*-150,000*	3,500,000	3,500,000			3,500,000	3,500,000
1200	Recruitment costs	80,000	80,000			80,000	80,000			80,000	80,000
1300	Missions and travel	270,000	270,000			270,000	270,000			270,000	270,000
1400	Training expenditure	80,000	80,000			80,000	80,000			80,000	80,000
1700	Representation expenditure	10,000	10,000			10,000	10,000			10,000	10,000
	Total for title 1	**4,090,000**	**4,090,000**	***-150,000***	***-150,000***	**3,940,000**	**3,940,000**			**3,940,000**	**3,940,000**
	Title 2 - Administrative expenditure										
2000	Rental of buildings	590,000	590,000			590,000	590,000			590,000	590,000
2100	Data processing	530,000	530,000			530,000	530,000			530,000	530,000
2200	Movable property	10,000	10,000			10,000	10,000			10,000	10,000
2300	Current administrative costs	130,000	130,000	*150,000*	*150,000*	280,000	280,000			280,000	280,000
2400	Postage and telecommunication costs	20,000	20,000			20,000	20,000			20,000	20,000
2500	Expenditure on meetings	120,000	120,000			120,000	120,000			120,000	120,000
2600	Other administrative expenditure	p.m.	p.m.			p.m.	p.m.			p.m.	p.m.
	Total for title 2	**1,400,000**	**1,400,000**	***150,000***	***150,000***	**1,550,000**	**1,550,000**			**1,550,000**	**1,550,000**
	Total for titles 1 and 2	**5,490,000**	**5,490,000**			**5,490,000**	**5,490,000**			**5,490,000**	**5,490,000**
	Title 3 - Operational expenditure										
3100	Expenditure on studies	2,350,000	2,350,000			2,350,000	2,350,000		*800,000*	2,350,000	3,150,000
3200	Publication and translation costs	50,000	50,000			50,000	50,000			50,000	50,000
	Sub-total for lines 3100 and 3200	**2,400,000**	**2,400,000**			**2,400,000**	**2,400,000**		***800,000***	**2,400,000**	**3,200,000**
3900	6th Framework Programme - 3rd call										
3901	Concession activities										
3902	In-Orbit Validation phase										
3903	EGNOS										
3904	6th Framework Programme - 2nd call										
3905	MEDA										
3906	Galileo Security Monitoring Centre (GSMC)										
3907	International activities										
3908	Joint Research Centre										
3909	Technical support provided by ESA										
3910	Certification activities										
3911	Matimop										
3912	NRSCC										
3913	7th Framework Programme	p.m.	p.m.			p.m.	p.m.			p.m.	p.m.
3914	Deployment phase Galileo										
3915	EGNOS second grant										
3916	MEDA II										
	Sub-total for operational activities										
	Total for title 3	**2,400,000**	**2,400,000**			**2,400,000**	**2,400,000**		***800,000***	**2,400,000**	**3,200,000**
	Total expenditure	**7,890,000**	**7,890,000**			**7,890,000**	**7,890,000**		***800,000***	**7,890,000**	**8,690,000**

Budget line	Heading	*Transfer 2/2010 (10/08/10)*		1st Amending Budget after Transfer 2/2010		*Payment appropriations for FP7 (25/08/10)*		1 Amedning Budget after Transfer 02/2009 and 1st		*Payment appropriations for FP7 (24/11/10)*		Final Budget	
		CA	*PA*	CA	PA	*CA*	*PA*	CA	PA	*CA*	*PA*	CA	PA
	REVENUE												
2000	Operating subsidy from the Commission			8,690,000				8,690,000				8,690,000	
2008	Operational funds from the Commission					*2,606,675*		2,606,675		*4,556,158*		7,162,833	
2009	Transfer from the Galileo Joint Undertaking												
9000	Miscellaneous revenue												
	Total revenue			**8,690,000**		**2,606,675**		**11,296,675**		**4,556,158**		**15,852,833**	
	EXPENDITURE												
	Title 1 - Staff												
1100	Staff expenditure	*-55,000*	*-55,000*	3,445,000	3,445,000			3,445,000	3,445,000			3,445,000	3,445,000
1200	Recruitment costs			80,000	80,000			80,000	80,000			80,000	80,000
1300	Missions and travel			270,000	270,000			270,000	270,000			270,000	270,000
1400	Training expenditure			80,000	80,000			80,000	80,000			80,000	80,000
1700	Representation expenditure			10,000	10,000			10,000	10,000			10,000	10,000
	Total for title 1	***-55,000***	***-55,000***	**3,885,000**	**3,885,000**			**3,885,000**	**3,885,000**			**3,885,000**	**3,885,000**
	Title 2 - Administrative expenditure												
2000	Rental of buildings			590,000	590,000			590,000	590,000			590,000	590,000
2100	Data processing			530,000	530,000			530,000	530,000			530,000	530,000
2200	Movable property			10,000	10,000			10,000	10,000			10,000	10,000
2300	Current administrative costs			280,000	280,000			280,000	280,000			280,000	280,000
2400	Postage and telecommunication costs			20,000	20,000			20,000	20,000			20,000	20,000
2500	Expenditure on meetings	*55,000*	*55,000*	175,000	175,000			175,000	175,000			175,000	175,000
2600	Other administrative expenditure			p.m.	p.m.			p.m.	p.m.			p.m.	p.m.
	Total for title 2	***55,000***	***55,000***	**1,605,000**	**1,605,000**			**1,605,000**	**1,605,000**			**1,605,000**	**1,605,000**
	Total for titles 1 and 2			**5,490,000**	**5,490,000**			**5,490,000**	**5,490,000**			**5,490,000**	**5,490,000**
	Title 3 - Operational expenditure												
3100	Expenditure on studies			2,350,000	3,150,000			2,350,000	3,150,000			2,350,000	3,150,000
3200	Publication and translation costs			50,000	50,000			50,000	50,000			50,000	50,000
	Sub-total for lines 3100 and 3200			**2,400,000**	**3,200,000**			**2,400,000**	**3,200,000**			**2,400,000**	**3,200,000**
3900	6th Framework Programme - 3rd call												
3901	Concession activities												
3902	In-Orbit Validation phase												
3903	EGNOS												
3904	6th Framework Programme - 2nd call												
3905	MEDA												
3906	Galileo Security Monitoring Centre (GSMC)												
3907	International activities												
3908	Joint Research Centre												
3909	Technical support provided by ESA												
3910	Certification activities												
3911	Matimop												
3912	NRSCC												
3913	7th Framework Programme			p.m.	p.m.		*2,606,675*		2,606,675		*4,556,158*		7,162,833
3914	Deployment phase Galileo												
3915	EGNOS second grant												
3916	MEDA II												
	Sub-total for operational activities						***2,606,675***		**2,606,675**		***4,556,158***		**7,162,833**
	Total for title 3			**2,400,000**	**3,200,000**		***2,606,675***	**2,400,000**	**5,806,675**		***4,556,158***	**2,400,000**	**10,362,833**
	Total expenditure			**7,890,000**	**8,690,000**		***2,606,675***	**7,890,000**	**11,296,675**		***4,556,158***	**7,890,000**	**15,852,833**

3.3 AMENDMENTS

The 2010 budget, adopted by the Administrative Board on 19 November 2009, was amended once.

The amendment was voted by the Administrative Board on 23 June 2010. It reflected a decision from DG ENTR (letter with ref. ENTR/F6/OL/ap D(2010)360971) to reinforce GSA's payment appropriations on budget line 3100 "Expenditure for studies" by €800,000. The purpose of this reinforcement was to maintain payment capacity on commitments carried over from previous years and on those entered into in 2010.

3.4 TRANSFERS

Two transfers were made in 2010 based on Article 23(1) of the GSA Financial Regulation.

On 15 June 2010, the Executive Director decided to transfer €150,000 from budget line 1100 "Staff expenditure" to budget line 2300 "Current administrative costs". This was done in order to finance the cost of legal support for the Legal Department due to staff shortages in that department, ie. the Head of Legal Department being appointed as Executive Director ad interim with effect from 1 July 2010 and the positions of Contracts and Procurement Officer being vacant.

On 10 August 2010, the Executive Director decided to transfer €55,000 from budget line 1100 "Staff expenditure" to budget line 2500 "Expenditure on meetings". This transfer was done in order to provide for the costs of meetings of the newly-created Security Accreditation Board and the related special bodies, which had not been budgeted for in the original budget for 2010.

3.5 EARMARKED REVENUE AND FINAL AVAILABLE APPROPRIATIONS FOR THE YEAR 2010

In the original 2010 budget adopted by the Administrative Board, token entries "p.m." appeared on budget line 3913 "7th Framework Programme", anticipating possible receipt of appropriations on this budget line.

On 25 August and 24 November 2010, the GSA received pre-financing from the European Commission amounting to €2,606,675 and €4,556,158 respectively in accordance with the 7th Framework Programme Delegation Agreement (Implementation of the Specific Programme "Cooperation", theme nr. 7 "Transport including aeronautics", sub-theme Galileo, by the European GNSS Supervisory Authority). In accordance with Article 18 of the GSA Financial Regulation, Article 10(2) of the Implementing Rules of the Framework Financial Regulation, the receipt of these earmarked revenues created payment appropriations on budget line 3913 "7th Framework Programme" (revenue line 2008 "Operational funds from the Commission").

Table 3 shows the variance between the final budget and the actual appropriations created based on the amounts received by the Agency.

The variance on line 9000 "Miscellaneous revenue" of €106,627.33 represents the interest received by the Agency on its bank accounts.

Table 3: Final authorised appropriations of the Agency – figures in €

Budget line	Heading	Final budget for 2010		Final appropriations created in 2010		Variance	
		Commitment appropriations	Payment appropriations	Commitment appropriations	Payment appropriations	Commitment appropriations	Payment appropriations
	REVENUE						
2000	Operating subsidy from the Commission	8,690,000		8,690,000			
2008	Operational funds from the Commission	7,162,833		7,162,833			
2009	Transfer from the Galileo Joint Undertaking						
9000	Miscellaneous revenue			106,627.33		-106,627.33	
	Total revenue	**15,852,833**		**15,959,460.33**		**-106,627.33**	
	EXPENDITURE						
	Title 1 - Staff						
1100	Staff expenditure	3,445,000.00	3,445,000.00	3,445,000.00	3,445,000.00		
1200	Recruitment costs	80,000.00	80,000.00	80,000.00	80,000.00		
1300	Missions and travel	270,000.00	270,000.00	270,000.00	270,000.00		
1400	Training expenditure	80,000.00	80,000.00	80,000.00	80,000.00		
1700	Representation expenditure	10,000.00	10,000.00	10,000.00	10,000.00		
	Total for title 1	**3,885,000.00**	**3,885,000.00**	**3,885,000.00**	**3,885,000.00**		
	Title 2 - Administrative expenditure						
2000	Rental of buildings	590,000.00	590,000.00	590,000.00	590,000.00		
2100	Data processing	530,000.00	530,000.00	530,000.00	530,000.00		
2200	Movable property	10,000.00	10,000.00	10,000.00	10,000.00		
2300	Current administrative costs	280,000.00	280,000.00	280,000.00	280,000.00		
2400	Postage and telecommunication costs	20,000.00	20,000.00	20,000.00	20,000.00		
2500	Expenditure on meetings	175,000.00	175,000.00	175,000.00	175,000.00		
2600	Other administrative expenditure						
	Total for title 2	**1,605,000.00**	**1,605,000.00**	**1,605,000.00**	**1,605,000.00**		
	Total for titles 1 and 2	**5,490,000.00**	**5,490,000.00**	**5,490,000.00**	**5,490,000.00**		
	Title 3 - Operational expenditure						
3100	Expenditure on studies	2,350,000.00	3,150,000.00	2,350,000.00	3,150,000.00		
3200	Publication and translation costs	50,000.00	50,000.00	50,000.00	50,000.00		
	Sub-total for lines 3100 and 3200	**2,400,000.00**	**3,200,000.00**	**2,400,000.00**	**3,200,000.00**		
3900	6th Framework Programme - 3rd call						
3901	Coneession activities						
3902	In-Orbit Validation phase						
3903	EGNOS						
3904	6th Framework Programme - 2nd call						
3905	MEDA						
3906	Galileo Seeurity Monitoring Centre (GSMe)						
3907	International activities						
3908	Joint Researeh centre						
3909	Technieal support provided by ESA						
3910	Certification aetivities						
3911	Matimop						
3912	NRSee						
3913	7th Framework Programme		7,162,833.00		7,162,833.00		
3914	Deployment phase Galileo						
3915	EGNOS second grant						
3916	MEDA II						
	Sub-total for operational activities		**7,162,833.00**		**7,162,833.00**		
	Total for title 3	**2,400,000.00**	**10,362,833.00**	**2,400,000.00**	**10,362,833.00**		
	Total expenditure	**7,890,000.00**	**15,852,833.00**	**7,890,000.00**	**15,852,833.00**		

4. CHAPTER 3 – EXECUTION OF THE BUDGET IN 2010

4.1 BACKGROUND

The GSA managed to achieve a very good implementation of the budget in 2010 despite the challenges it was facing (transfer of activities to the European Commission, departure of the Executive Director, shortages of personnel etc.).

4.2 OVERALL BUDGET EXECUTION

Table 4 provides an overview of the Agency's execution of the budget. Considering the part of the budget financed by the Community subsidy, Titles 1, 2 and 3 combined reached an execution of 97 percent for commitments and 76 percent for payments.

Table 4: Summary budget execution 2010 – figures in € and %

Heading	Final appropriations created in 2010		Execution in €		Execution in %		*Execution in % (2009)*	
	Commitment appropriations	Payment appropriations	Commitment appropriations	Payment appropriations	CA	PA	*CA*	*PA*
EXPENDITURE								
Title 1 - Staff	3,885,000.00	3,885,000.00	3,735,532.12	3,474,178.48	96%	89%	*98%*	*93%*
Title 2 - Administrative expenditure	1,605,000.00	1,605,000.00	1,584,968.76	1,249,037.68	99%	78%	*94%*	*74%*
Total for titles 1 and 2	**5,490,000.00**	**5,490,000.00**	**5,320,500.88**	**4,723,216.16**	**97%**	**86%**	***97%***	***87%***
Sub-total for lines 3100 and 3200 financed by EC subsidy	2,400,000.00	3,200,000.00	2,366,824.34	1,913,184.06	99%	60%	*98%*	*97%*
Sub-total for operational activities (earmarked revenue)	66,598,923.22	54,337,216.05	59,401,422.45	38,384,303.23	89%	71%	*81%*	*54%*
Total for title 3	**68,998,923.22**	**57,537,216.05**	**61,768,246.79**	**40,297,487.29**	**90%**	**70%**	***81%***	***55%***
Total expenditure	**74,488,923.22**	**63,027,216.05**	**67,088,747.67**	**45,020,703.45**	**90%**	**71%**	***82%***	***56%***
For information: total expenditure financed by the operating subsidy	**7,890,000.00**	**8,690,000.00**	**7,687,325.22**	**6,636,400.22**	**97%**	**76%**	***97%***	***91%***

4.3 STAFF EXPENDITURE (TITLE 1)

Table 5: Summary budget execution 2010 for Title 1 – figures in € and %

Budget line	Heading	Final appropriations created in 2010		Execution in €		Execution in %		*Execution in % (2009)*	
		Commitment appropriations	Payment appropriations	Commitment appropriations	Payment appropriations	CA	PA	*CA*	*PA*
	EXPENDITURE								
	Title 1 - Staff								
1100	Staff expenditure	3,445,000.00	3,445,000.00	3,342,500.00	3,158,634.53	97%	92%	*100%*	*97%*
1200	Recruitment costs	80,000.00	80,000.00	40,486.11	33,594.54	51%	42%	*52%*	*47%*
1300	Missions and travel	270,000.00	270,000.00	270,000.00	223,737.12	100%	83%	*100%*	*88%*
1400	Training expenditure	80,000.00	80,000.00	79,387.96	56,787.78	99%	71%	*76%*	*34%*
1700	Representation expenditure	10,000.00	10,000.00	3,158.05	1,424.51	32%	14%	*27%*	*14%*
	Total for title 1	**3,885,000.00**	**3,885,000.00**	**3,735,532.12**	**3,474,178.48**	**96%**	**89%**	***98%***	***93%***

Table 5 provides a breakdown of the budget execution for Title 1. The 96 percent execution for commitments and 89 percent execution for payments build upon the good results achieved already in 2009.

The difference in commitment and payment appropriations execution of budget line 1300 "Missions and travel" stems from the relatively high number of missions that took place in November and December 2010, for which the payments will be made in early 2011.

4.4 ADMINISTRATIVE EXPENDITURE (TITLE 2)

Table 6: Summary budget execution 2010 for Title 2 – figures in € and %

Budget line	Heading	Final appropriations created in 2010		Execution in €		Execution in %		*Execution in % (2009)*	
		Commitment appropriations	Payment appropriations	Commitment appropriations	Payment appropriations	CA	PA	*CA*	*PA*
	EXPENDITURE								
	Title 2 - Administrative expenditure								
2000	Rental of buildings	590,000.00	590,000.00	582,500.00	557,647.02	99%	95%	*100%*	*100%*
2100	Data processing	530,000.00	530,000.00	528,533.10	450,243.42	100%	85%	*100%*	*57%*
2200	Movable property	10,000.00	10,000.00	9,564.78	4,850.00	96%	49%	*96%*	*96%*
2300	Current administrative costs	280,000.00	280,000.00	280,000.00	139,695.36	100%	50%	*100%*	*84%*
2400	Postage and telecommunication costs	20,000.00	20,000.00	20,000.00	20,000.00	100%	100%	*n.a.*	*n.a.*
2500	Expenditure on meetings	175,000.00	175,000.00	164,370.88	76,601.88	94%	44%	*53%*	*25%*
2600	Other administrative expenditure	0.00	0.00	0.00	0.00	n.a.	n.a.	n.a.	n.a.
	Total for title 2	**1,605,000.00**	**1,605,000.00**	**1,584,968.76**	**1,249,037.68**	**99%**	**78%**	***94%***	***74%***

Table 6 provides a breakdown of the budget execution for Title 2. The impressive 99 percent execution for commitments and 78 percent execution for payments are a further improvement compared to the previous year.

Line 2300 "Current administrative costs" was fully executed in 2010. The initially budgeted amount for this line of €130,000 had to be reinforced by €150,000 transferred from budget line 1100 "Staff expenditure" (Transfer 01/2010) in order to cover the cost of additional legal support needed following the appointment of the Head of Legal Department as Executive Director ad interim.

Budget lines 2100 "Data processing" and 2400 "Postage and telecommunication costs" also had full execution in terms of commitment appropriations.

The execution on budget line 2500 "Expenditure on meetings" was considerably higher than in 2009. The initially budgeted amount for this line was €120,000. It had to be reinforced by €55,000 transferred from budget line 1100 "Staff expenditure" (Transfer 02/2010) in order to cover the costs of meetings of the newly-created Security Accreditation Board, which did not exist under the previous GSA Regulation.

4.5 OPERATIONAL EXPENDITURE (TITLE 3)

4.5.1 Operational expenditure financed by the Community subsidy (lines 3100 and 3200)

Table 7: Summary budget execution 2010 for lines 3100 and 3200 – figures in € and %

Budget line	Heading	Final appropriations created in 2010		Execution in €		Execution in %		*Execution in % (2009)*	
		Commitment appropriations	Payment appropriations	Commitment appropriations	Payment appropriations	CA	PA	*CA*	*PA*
	EXPENDITURE								
	Title 3 - Operational expenditure								
3100	Expenditure on studies	2,350,000.00	3,150,000.00	2,340,198.19	1,887,866.56	100%	60%	*99%*	*99%*
3200	Publication and translation costs	50,000.00	50,000.00	26,626.15	25,317.50	53%	51%	*44%*	*28%*
	Sub-total for lines 3100 and 3200	**2,400,000.00**	**3,200,000.00**	**2,366,824.34**	**1,913,184.06**	**99%**	**60%**	***98%***	***97%***

The execution rate for the operational expenditure financed by the Community subsidy was 99 percent for commitments and 60 percent for payments, compared with 98 percent and 97 percent in 2009 respectively.

The utilisation of commitment appropriations of budget line 3100 "Expenditure on studies" reached the impressive level of 100 percent. The 60 percent execution of payment appropriations is lower than expected, explained by the fact that most appropriations were committed late in the year due to the delayed signature of the new framework (and subsequent specific contracts) for Security and Market Development activities by the GSA. It should be noted that the framework contracts have a multi-year life span, their signature was preceded by a lengthy and complex procurement procedure. This late implementation pattern of the budget for studies is not expected to happen again in 2011.

The commitment execution rate of 53 percent for 3200 "Publication and translation costs" is low due to the lower actual needs for publications and translations in 2010.

4.5.2 Operational expenditure financed by earmarked revenue (Title 3, budget lines 3900 to 3916)

Table 8 summarises the annual execution of the operational expenditure financed by earmarked revenue (Title 3, chapter 39), illustrating 89 percent execution in terms of commitment and 71 percent in terms of payment appropriations.

Table 9 summarises the cumulative execution of the operational expenditure financed by earmarked revenue (Title 3, chapter 39). Cumulative execution here is defined as the execution of the available 2010 commitment and payment appropriations resulting from earmarked revenues irrespective of the year in which these appropriations were created (i.e. 2007, 2008, 2009 or 2010). Table 9 is also a follow-up of the earmarked funds (amounts received, executed and appropriations carried over to 2011). The outstanding balances on several of these budget lines will be transferred to the European Commission in 2011, as explained in chapter 5.

At the end of 2010, this operational expenditure shows an execution of 97 percent of the commitment appropriations and 93 percent of the available payment appropriations. A substantial part of these appropriations originate in agreements/contracts taken over from the Galileo Joint Undertaking, which transferred to the GSA the funds for the discharge of the corresponding obligations.

As mentioned in chapter 2, section 5 of this report, the operational funds received from the European Commission created payment appropriations on budget line 3913 "7th Framework Programme" amounting to €7,162,833.

Table 8: Summary annual budget execution 2010 for lines 3900 to 3916 – Final appropriations created (including carry overs) in 2010 and their execution - figures in € and % - CA stands for "commitment appropriations" and PA for "payment appropriations"

(See next page)

Budget line	Heading	Final appropriations created in 2010		Execution in €		Execution in %		*Execution in % (2009)*	
		Commitment appropriations	Payment appropriations	Commitment appropriations	Payment appropriations	CA	PA	*CA*	*PA*
3900	6th Framework Programme - 3rd call	1,903,893.92	1,903,893.92	1,599,990.18	759,222.33	84%	40%	*94%*	*43%*
3901	Concession activities	2,418,185.63	2,418,185.63	2,418,185.63	2,418,185.63	100%	100%	*4%*	*100%*
3902	In-Orbit Validation phase	4,000,000.00	4,000,000.00	4,000,000.00	4,000,000.00	100%	100%	*86%*	*14%*
3903	EGNOS	69,852.13	69,852.13	69,852.13	69,852.13	100%	100%	*76%*	*24%*
3904	6th Framework Programme - 2nd call	5,383,749.47	5,383,749.47	3,662,357.00	2,030,192.00	68%	38%	*89%*	*39%*
3905	MEDA	1,109,014.23	1,109,014.23	1,089,718.00	1,089,718.00	98%	98%	*100%*	*84%*
3906	Galileo Security Monitoring Centre (GSMC)	0.00	0.00	0.00	0.00	n.a.	n.a.	*n.a.*	*n.a.*
3907	International activities	290,000.00	290,000.00	233,900.00	233,900.00	81%	81%	*98%*	*57%*
3908	Joint Research Centre	31,992.01	31,992.01	0.00	0.00	0%	0%	*0%*	*100%*
3909	Technical support provided by ESA	2,001,933.82	2,001,933.82	2,001,933.82	1,933.82	100%	0%	*100%*	*100%*
3910	Certification activities	1,711,300.00	1,711,300.00	1,711,300.00	1,711,300.00	100%	100%	*73%*	*88%*
3911	Matimop	4,458,000.00	4,458,000.00	0.00	0.00	0%	0%	*0%*	*100%*
3912	NRSCC	35,641.74	35,641.74	0.00	0.00	0%	0%	*0%*	*100%*
3913	7th Framework Programme	43,185,360.27	30,923,653.10	42,614,185.69	26,069,999.32	99%	84%	*87%*	*60%*
3914	Deployment phase Galileo	0.00	0.00	0.00	0.00	n.a.	n.a.	*n.a.*	*n.a.*
3915	EGNOS second grant	0.00	0.00	0.00	0.00	n.a.	n.a.	*100%*	*0%*
3916	MEDA II	0.00	0.00	0.00	0.00	n.a.	n.a.	*0%*	*100%*
	Sub-total for operational activities (earmarked revenue)	**66,598,923.22**	**54,337,216.05**	**59,401,422.45**	**38,384,303.23**	**89%**	**71%**	***90%***	***79%***

Table 9: Summary cumulative budget execution 2010 for lines 3900 to 3916 – figures in € and % - CA stands for "commitment appropriations" and PA for "payment appropriations"

Budget line	Heading	(a)		(b)		Cumulative execution 2010		(c)=(a)-(b)	
		Appropriations made available before or in 2010		Appropriations executed before or in 2010				2011 Estimated appropriations available for execution	
		CA	PA	CA	PA	CA	PA	CA	PA
	EXPENDITURE								
	Title 3 - Operational expenditure								
3900	6th Framework Programme - 3rd call	9,669,667	9,669,667	9,365,763	8,524,995	97%	88%	303,904	1,144,672
3901	Concession activities	4,058,924	4,058,924	4,058,924	4,058,924	100%	100%	0	0
3902	In-Orbit Validation phase	93,150,000	93,150,000	93,150,000	93,150,000	100%	100%	0	0
3903	EGNOS	5,759,868	5,759,868	5,759,868	5,759,868	100%	100%	0	0
3904	6th Framework Programme - 2nd call	47,387,312	47,387,312	45,665,919	44,033,754	96%	93%	1,721,392	3,353,557
3905	MEDA	2,651,655	2,651,655	2,632,359	2,632,359	99%	99%	19,296	19,296
3906	Galileo Security Monitoring Centre (GSMC)	699,570	699,570	699,570	699,570	100%	100%	0	0
3907	International activities	1,256,769	1,256,769	1,200,669	1,200,669	96%	96%	56,100	56,100
3908	Joint Research Centre	63,000	63,000	31,008	31,008	49%	49%	31,992	31,992
3909	Technical support provided by ESA	4,169,598	4,169,598	4,169,598	2,169,598	100%	52%	0	2,000,000
3910	Certification activities	2,000,000	2,000,000	2,000,000	2,000,000	100%	100%	0	0
3911	Matimop	4,458,000	4,458,000	0	0	0%	0%	4,458,000	4,458,000
3912	NRSCC	40,818	40,818	5,176	5,176	13%	13%	35,642	35,642
3913	7th Framework Programme	70,955,115	58,693,408	70,383,941	53,839,754	99%	92%	571,175	4,853,654
3914	Deployment phase Galileo	0	0	0	0	n/a	n/a	0	0
3915	EGNOS second grant	10,000,000	10,000,000	10,000,000	10,000,000	100%	100%	0	0
3916	MEDA II	0	0	0	0	n/a	n/a	0	0
	Total expenditure funded by earmarked revenue	**256,320,295**	**244,058,588**	**249,122,794**	**228,105,675**	**97%**	**93%**	**7,197,501**	**15,952,913**

5. CHAPTER 4 – ANALYSIS OF OUTSTANDING COMMITMENTS EVOLUTION

Table 10: Evolution of outstanding balances – figures in €

		(a)	(b)	(c)	(d)	(e)	(f)=(a)-(b)+(c)-(d)-(e)
Budget line	Heading	Outstanding balances as of 1/1/10	Payments on outstanding balances in 2010	New commitments 2010	Payments on new commitments 2010	Cancellations 2010	Outstanding balances as of 31/12/10
	EXPENDITURE						
	Title 1 - Staff						
1100	Staff expenditure			3,342,500.00	3,158,634.53	183,865.47	0.00
1200	Recruitment costs	3,407.72	250.00	40,486.11	33,594.54	3,157.72	6,891.57
1300	Missions and travel	23,467.58	18,198.33	270,000.00	223,737.12	5,269.25	46,262.88
1400	Training expenditure	33,549.74	17,418.45	79,387.96	56,787.78	16,131.29	22,600.18
1700	Representation expenditure	1,282.50	328.00	3,158.05	1,424.51	954.50	1,733.54
	Total for title 1	**61,707.54**	**36,194.78**	**3,735,532.12**	**3,474,178.48**	**209,378.23**	**77,488.17**
	Title 2 - Administrative expenditure						
2000	Rental of buildings	0.00	0.00	582,500.00	557,647.02	0.00	24,852.98
2100	Data processing	213,767.76	199,112.18	528,533.10	450,243.42	14,655.58	78,289.68
2200	Movable property	0.00	0.00	9,564.78	4,850.00	0.00	4,714.78
2300	Current administrative costs	21,605.98	18,140.05	280,000.00	139,695.36	3,465.93	140,304.64
2400	Postage and telecommunication costs	0.00	0.00	20,000.00	20,000.00	0.00	0.00
2500	Expenditure on meetings	45,188.31	10,077.50	164,370.88	76,601.88	35,110.81	87,769.00
2600	Other administrative expenditure						
	Total for title 2	**280,562.05**	**227,329.73**	**1,584,968.76**	**1,249,037.68**	**53,232.32**	**335,931.08**
	Total for titles 1 and 2	**342,269.59**	**263,524.51**	**5,320,500.88**	**4,723,216.16**	**262,610.55**	**413,419.25**
	Title 3 - Operational expenditure						
3100	Expenditure on studies	2,627,015.55	1,664,822.25	2,340,198.19	223,044.31	94,328.10	2,985,019.08
3200	Publication and translation costs	16,737.60	1,547.94	26,626.15	23,769.56	3,607.60	14,438.65
	Total for title 3*	**2,643,753.15**	**1,666,370.19**	**2,366,824.34**	**246,813.87**	**97,935.70**	**2,999,457.73**
	Total expenditure	**2,986,022.74**	**1,929,894.70**	**7,687,325.22**	**4,970,030.03**	**360,546.25**	**3,412,876.98**
	*Budget lines 3100 and 3200 only (excluding Chapter 39)						

Table 10 summarises the evolution of outstanding commitment balances during the year by title. It should be highlighted that on title 3 the payments related to the outstanding balance at the beginning of the year accounted for 87 percent of all payments made on budget lines 3100 and 3200 during the year.

Regarding budget line 1100, cancellations were related to the C1 credits becoming automatically C9 on that budget line in the following year.

Regarding budget lines 1200, 1300, 1400, 1700, 2100, 2300 and 2500, cancellations were related to C8 credits becoming automatically C9 in the following year on administrative expenditure budget lines.

Regarding budget lines 3100 and 3200, cancellations were related to de-commitments performed in 2010.

6. CHAPTER 5 – BUDGETARY IMPLICATIONS OF THE TRANSFER OF ACTIVITIES TO THE EUROPEAN COMMISSION

Further to Article 8 of Regulation (EC) No. 683/2008 ("GNSS Regulation") and the transfer of activities and staff with effect on 1 January 2009, the Administrative Board of the GSA, at its 19th meeting held on 19 March 2009, decided on the transfer of GSA-owned tangible and intangible assets created or developed under the EGNOS and Galileo programmes including all rights, obligations, titles and interest related to the aforementioned programmes to the European Community, represented by the European Commission (Doc. GSA-AB-09-03-19-09).

In December 2008, a special task force was created, with staff from the GSA and DG TREN, in order to prepare the legal and financial implementation of the transfer.

Following the conclusions of the task force, the GSA sent a letter to DG TREN (ref. GSA(2009)/OED/LO/FIN/D/779), on 3 July 2009, in which the GSA requested confirmation from the European Commission on the acceptance of the ownership of the assets subject to the transfer.

On 1 December 2009, the GSA received the European Commission's letter accepting the ownership of the assets subject to the transfer (ref. TREN/G5 JM 1b D(2009)71058).

Based on the instructions received from DG BUDG in late December 2009 (letters from Mr. Taverne ref. Budget/DLA/CS/EB/cb/D(2009)/441611 dated 22 December 2009 and ref. Budget/CS/EB/D(2009) dated 24 December 2009), the GSA executed in early January 2010 the transfer of outstanding balances on the commitments listed below.

Table 11: Transfer to the European Commission in January 2010

	central key	local key	budget line	initial amount	open amount as at 31.12.2009
Commitments transferred					
1	6400462063	GSA.466	EGSA-B2009-B03910-R0-GSA	310,000.00	310,000.00
2	6400462127	GSA.471	EGSA-B2009-B03910-R0-GSA	873,459.40	873,459.40
3	6400415261	GSA.279	EGSA-B2009-B03100-C8-GSA	300,000.00	0.00
4	6400444287	GSA.413	EGSA-B2009-B03100-C8-GSA	59,700.00	29,700.00
5	6400467344	GSA.529	EGSA-B2009-B03100-C3-GSA	130,000.00	104,000.00
	SUBTOTAL			1,673,159.40	1,317,159.40
FP 7 commitments transferred					
1	6700103566	GSA.538	EGSA-B2009-B03913-R0-GSA	698,006.00	279,202.00
2	6700103416	GSA.537	EGSA-B2009-B03913-R0-GSA	1,999,390.00	799,756.00
3	6700103394	GSA.536	EGSA-B2009-B03913-R0-GSA	1,999,581.00	799,832.00
4	6400488499	GSA.635	EGSA-B2009-B03913-R0-GSA	1,999,930.00	799,972.00
5	6700103218	GSA.531	EGSA-B2009-B03913-R0-GSA	590,501.00	177,150.00
6	6400461656	GSA.463	EGSA-B2009-B03913-R0-GSA	699,220.00	524,415.00
7	6400461650	GSA.462	EGSA-B2009-B03913-R0-GSA	499,991.00	390,697.90
8	6400463349	GSA.465	EGSA-B2009-B03913-R0-GSA	499,997.00	374,997.00
9	6400462123	GSA.470	EGSA-B2009-B03913-R0-GSA	995,448.00	248,862.00
10	6400460453	GSA.460	EGSA-B2009-B03913-R0-GSA	498,697.00	398,958.00
11	6400461916	GSA.464	EGSA-B2009-B03913-R0-GSA	1,800,000.00	1,260,000.00
	SUBTOTAL			12,280,761.00	6,053,841.90
	TOTAL TRANSFERRED			13,953,920.40	7,371,001.30

Balances on FP7 commitments included in the table above were transferred with a retroactive effect for 2009 accounts. The transfer of FP7 commitments was performed centrally by DG Budget by de-committing the balances. As a result of de-commitments, the available commitment appropriations on budget line 3913 increased by 6,053,841.90 EUR, which in fact should have been decreased due to the transfer of the activities. This error was corrected in May 2010, affecting 2010 budget; the available commitment appropriations were reduced accordingly.

The GSA followed up on the transfer of assets to the European Commission in March 2010. Funds transferred on budget lines 3901, 3902, 3903 and 3909, 3910 amounted to €6,917,812.18. The

transfer of these funds was performed in accordance with Commission Decision C(2009)8450 of 5 November 2009.

Furthermore, the GSA transferred the appropriations and outstanding balance on budget line 3916, following a letter from the Commission (Ref. Ares (2010)168514) dated 30 March 2010, which amounted to €4,500,000.

Table 12: Other payment appropriations transferred to the Commission in 2010

Budget line	Description	Commitment appropriations available 31.12.2009	Payment appropriations available 31.12.2009	Transfer executed in 2010		PA available 31.12.2010
				Debit note no. 3241001088 of 12/02/10 with impact on 2010 accounts	Debit note no. 3041000448 of 01/07/2010 with impact on 2010 accounts	
3901	Concession activities	2,318,185.63	2,418,185.63	2,318,185.63	100,000.00	0
3902	In-Orbit Validation	4,000,000.00	4,000,000.00	4,000,000.00		0
3903	EGNOS	69,852.13	69,852.13	69,852.13		0
3909	Technical support provided ESA	1,933.82	2,001,933.82	1,933.82		2,000,000
3910	Certification of activities	527,840.60	527,840.60	527,840.60		0
		6,917,812.18	9,017,812.18	6,917,812.18	100,000.00	2,000,000
Budget line	Description	Commitment appropriations available 31.12.2009	Payment appropriations available 31.12.2009	Debit note no. 3241003878 of 19/04/10 with impact on 2010 accounts		
3916	MEDA II	4,500,000.00	4,500,000.00	4,500,000.00		0

In addition to the above, the transfer of budget lines included in Table 13 will be completed in early 2011. This has been confirmed by an exchange of letters with the European Commission, (letter from Heike Wieland to Georgette Lalis with ref. GSA(2010)473243 dated 20 August 2010). Currently a Commission Decision is being awaited in order to proceed with the transfer of commitments and corresponding payment appropriations.

Table 13: Planned transfer of commitment and payment appropriations to the European Commission during 2011

Budget line	Description	Commitment approproations to be transferred in 2011	Payment approproations to be transferred in 2011
3905	MEDA	19,296.23	19,296.23
3907	INTERNATIONAL	56,100.00	56,100.00
3908	JRC	31,992.01	31,992.01
3912	NRSCC	35,641.70	35,641.70
		143,029.94	143,029.94

Finally, there are two other budget lines which might be subject to a full or partial transfer in 2011, uncommitted funds of €4,458,000 on budget line 3911 "MATIMOP" and committed funds of €2,000,000 on budget line 3909 "TECHNICAL ESA". The exact date and modalities of the transfer cannot be confirmed at this stage.

Table 14: Summary of transfers to the European Commission in 2010

(See next page)

Budget line	Commitment	CA transferred	PA transferred	Impact for year	Description	Reference
3913	GSA 538	279,202.00	-	2009	The amounts to be transferred were initially committed with different beneficiaries. However, these commitments did not have any related payment appropriations due to the particular nature of FP7 funds. In order to facilitate the transfer to the EC, the commitments were de-committed in GSA accounts, the budget line was reduced by the amount that was transferred. No cash transfer took place. The EC recreated then the same commitments in their accounts.	Letter from Mr Ieverne (ref Budget/CG/EB/D(2009), dated 24/12/2009)
3913	GSA 537	799,755.00	-			
3913	GSA 536	799,032.00	-			
3913	GSA 635	799,972.00	-			
3913	GSA 531	177,150.00	-			
3913	GSA 463	524,415.00	-			
3913	GSA 462	390,697.90	-			
3913	GSA 465	374,997.00	-			
3913	GSA 470	248,862.00	-			
3913	GSA 460	398,958.00	-			
3913	GSA 464	1,200,000.00	-			
		6,053,811.90	-			
3901	GSA 780	2,318,185.63	2,318,185.63	2010	The amounts to be transferred were initially uncommitted funds on various budget lines. In order to facilitate the transfer to the EC, a fictive commitment GSA 780 was created and a payment was made against this commitment.	Debit note no. 3241000088 of 12/10/2010
3902	GSA 780	4,000,000.00	4,000,000.00			
3903	GSA 780	69,852.13	69,852.13			
3909	GSA 780	1,933.82	1,933.82			
3910	GSA 780	527,840.60	527,840.60			
		6,917,812.18	**6,917,812.18**			
3901	GSA 191	100,000.00	100,000.00	2010	The amount to be transferred was initially committed with the European Commission (JRC). The EC issued a debit note and a payment was made to the EC against the existing commitment.	Debit note no. 3041000448 of 01/07/2010
		100,000.00	**100,000.00**			
3916	n/a	4,500,000.00	4,500,000.00	2010	The amount to be transferred has never been committed in GSA accounts. Upon the termination of the delegation agreement and upon the receipt of a debit note from the EC, a payment was made to the EC and the budget line reduced accordingly.	Debit note no. 3241003878 of 19/04/2010
		4,500,000.00	**4,500,000.00**			

ANNEX 4

Overview of FP7 Projects

FP7 1ST CALL: SECURITY-RELATED ACTIVITIES

PROGRESS[36] is providing specification and standardization for PRS receivers and security architecture. In more detail, the objects of the present study are:

- The implementation of the standardization, security and safety certification, security accreditation requirements and roadmap for PRS receivers;
- The definition of the functional analysis of the security modules of the PRS receivers and of the relevant security architecture and protection profiles;
- The assessment of the performance of the PRS receivers and the preparation of the development of PRS receivers prototypes;
- The provision of guidelines and recommendations for industry and Member States for the development of PRS receivers.

This two-year €2,498,642 contract was signed on 16 December 2008, and activities kicked off on 23 January 2009.

FP7 1ST CALL: MARKET DEVELOPMENT-RELATED ACTIVITIES

- GACELA[37] is defining the main guidelines and recommendations for the implementation of the first Centre of Expertise based on Galileo applications for Latin American region. The 15-month project started on 27 March 2009 with a €558,681 grant.
- GALAPAGOS[38] is developing a positioning system for container tracking, based on high sensitivity GNSS receivers augmented by EGNOS/EDAS and assisted data. The 15-month project started on 21 January 2009 with a €299,823 grant.
- GALILEOCAST[39] is developing new applications on weather related mass market services, in particular for mobile and broadcast customers. In summary, GalileoCast is planning to deliver very high resolution local weather forecasts by using dense observational data from mobile sensors on local buses (tracked by GPS) in very high resolution forecast models. The 17-month project started on 1 February 2009 with a €299,816 grant.
- GIANT-2[40] intends to accelerate the adoption of EGNOS in the aviation sector, specifically in the Regional, Corporate and General Aviation, as well as the Helicopter SAR areas. The 24-month project started on 20 January 2009 with a €1,070,603 grant.
- GINA[41] addresses the adoption of EGNOS/Galileo in the road sector considering technical feasibility on a large scale, economic viability and positive impacts in aspects such as congestion and pollution. The 24-month project started on 5 March 2009 with a €1,307,363 grant.
- GSC[42] proposes a new effort for establishing conditions for an open and competitive mass market of GNSS-enabled road transport services to leverage the value of GALILEO and EGNOS. The 24-month project started on 1 March 2009 with a €1,429,655 grant.
- GSW[43] is developing a product that interfaces with an on-board Intelligent Speed Adaptation (ISA) system to record the driver's compliance with the ISA system's speed recommendations. The 18-month project started on 12 January 2009 with a €299,438 grant.
- HEDGE[44] is aimed at demonstrating new helicopter approach procedures for mountain rescue, offshore oilfield operations, helicopter emergency services and air taxi operations,

[36] PROGRESS: PROgramme for Governmental Receivers.
[37] GACELA: GALILEO Centre of Excellence for Latin America.
[38] GALAPAGOS: GALileo-bAsed seamless and robust Positioning Applications for loGistics Optimation processes.
[39] GALILEOCAST: Innovative Forecast and Broadcast Applications with Galileo.
[40] GIANT-2: EGNOS Adoption in the Aviation Sector.
[41] GINA: GNSS for INnovative road Applications.
[42] GSC: Innovative GNSS-based Road Applications.
[43] GSW: Galileo Speed Warning.
[44] HEDGE: Helicopters Deploy GNSS in Europe.

and supporting these with necessary standards/certification/safety work to accelerate their operational deployment. The 24-month project started on 25 February 2009 with a €846,211 grant.

- IEGLO[45] aims at developing an end-to-end prototype of a complete service for personal mobility tracking such as monitoring of Alzheimer disease patients or elderly people. The 16-month project started on 21 January 2009 with a €299,645 grant.
- IMAGEO[46] provides a new integrated scenario for geotemporal visual media tagging and use in the converged world. It transforms the way existing tagging processes are organised and in particular how geotemporal tagged media content is offered and how people search for information. The 18-month project started on 19 January 2009 with a €299,891 grant.
- METAPOS[47] aims at creating a new European meta-positioning service that acts as an intelligent broker, characterising available PDTs, leveraging them for the application at hand, and receiving feedback on the real efficacy of the positioning from the user. The 18-month project started on 1 February 2009 with a €299,210 grant.
- MOW BY SAT[48] is focused on increasing the adoption of GNSS towards domestic robot applications, like autonomous mowers, which do not currently use GNSS for their guidance systems. The 16-month project started on 23 January 2009 with a €299,400 grant.
- MUGGES[49] proposes the usage of LBS GNSS technology as a driver of the Mobile User-Generated social service paradigm, which represents a clear current trend of business innovation. The mobile terminal will evolve to become also a server. The 24-month project started on 12 March 2009 with a €1,150,000 grant.
- OPTI-TRANS[50] aims to create a Mobile GNSS platform which will provide commuters/travellers with the ability to plan their trip in an efficient manner in order to utilise and share a combination of public/private transportation by combining information from the various public transport authorities and other private vehicle owners. The 24-month project started on 11 February 2009 with a €1,139,638 grant.
- PEGASE[51] performs a series of activities tailored to the needs of the GSA: support for the management of the Galileo FP7 1st call projects, advice to GSA on the domains of interest, establishment of advisory expert groups on request, support to SMEs for the exploitation of results and technology transfer, coordination with national/regional/local initiatives, dissemination of information and knowledge, market monitoring. The 24-month project started on 1 December 2008 with a €1,499,966 grant.
- SEAGAL[52] is defining an implementation plan for a European GNSS Collaboration Centre in support of educational, commercial and technical needs in South-East Asia that "will increasingly be one of the most dynamic growth engines of the world economy". The 18-month project started on 15 March 2009 with a €459,476 grant.
- SIGNATURE[53] is prototyping a GNSS based solution for flexible road user charging which provides a high integrity, or trustworthy, solution in a cost-effective and scalable manner. The 18-month project started on 1 February 2009 with a €299,881 grant.
- TIGER[54] represents the development of a highly innovative security platform and target application exploiting current and future GNSS as well as augmentations systems such as EGNOS. It provides a platform for the target mass-market application, an access control token, and ensures development of European intellectual property that can be leveraged in future research, presenting significant market opportunity. The 18-month project started on 13 January 2009 with a €301,011 grant.

[45] IEGLO: Infrastructure-Augmented EGNOS/Galileo Receiver for Personal Mobility.
[46] IMAGEO: ImaGeo: Accurate geotemporal coding in Photos.
[47] METAPOS: A meta-service integrating diverse position determining technologies for LBS.
[48] MOW BY SAT: MOWing the lawn BY SATellite.
[49] MUGGES: Innovative GNSS-based Mobile LBS Applications.
[50] OPTI-TRANS: Optimised Transport System for Mobile Location Based Services.
[51] PEGASE: Provision of Expertise to GSA And Support to Enabling activities.
[52] SEAGAL: South East Asia centre on European GNSS for international cooperation And Local development.
[53] SIGNATURE: Simple GNSS Assisted and Trusted Receiver.
[54] TIGER: Trusted GNSS Receiver.

FP7 2ND CALL: SECURITY-RELATED ACTIVITIES

- PROPHET[55] focuses on developing an end-to-end simulation tool that simulates all the mechanisms of PRS management within the Galileo system. It should allow the assessment of key performance characteristics related to PRS access control policy (e.g., propagation duration of denial orders), modelling of the behaviour of the Galileo system from a PRS management point of view (including robustness issues), assessment of PRS operational use cases and demonstration to Member States, support for design optimisation of the system by evaluating the impact of some possible design evolutions on these performance characteristics. This 3-year, €2,750,000 contract was signed on 10 November 2009, and activities were kicked off on 19 November 2009.
- FORTRESS[56] will provide a demonstrator of anti-tampering technologies. The need to develop and evaluate new technologies for the PRS Receivers' Security Module (SM) makes it essential to put in place a demonstrator on security technology, which would aim at the following objectives: securing the technological roadmap to have PRS receivers available by 2013, validating the feasibility of the critical security requirements (protection profile) produced in PROGRESS study, proving the technical feasibility of the implementation of security functions induced by PROGRESS, defining the security functions to be offered to Member States intending to develop PRS security modules. This 30-month, €3,998,895.91 contract was signed on 16 December 2009, and activities will be kicked off on 16 February 2010.
- PROTECTOR[57] aims at defining (1) the means needed to protect the European GNSS systems and services against radio-source interferences to prevent service disruptions; and (2) technical and economical aspects of a European system and service for the management of interference and jamming. It has been highlighted in several past studies (EuroGNSS, GSMC, PACIFIC), that interferences and jamming are serious and realistic threats to existing and future GNSS. Moreover even GNSS services with enhanced robustness to these threats such as the Galileo PRS would only bring full benefits to users and European governments if they come together with interference and jamming monitoring capability. The roadmap for the user exploitation of PRS produced during the PACIFIC study advises the GSA that each Member State will have to define its approach and response to these threats and interference monitoring. It appears in recent discussions between the GSA and Member State representatives that the Member States would like the GSMC to take care of the interference monitoring capability. Therefore, studies on an interference monitoring system dedicated to the detection and localisation of GNSS disruption sources to European users and in particular PRS users are of high interest. This 18-month, €1 million contract was signed on 5 February 2010, and activities will be kicked off on 17 March 2010.

FP7 2ND CALL: MARKET DEVELOPMENT-RELATED ACTIVITIES

- ACCEPTA[58] concept is the acceleration of the EGNOS adoption in the aviation sector, with a wide-scale real-life adoption of the EGNOS-enabled LPV approaches throughout European airports where the SBAS signal is available and certified. The 24-month project started on 30 January 2010 with a €2,508,928 grant.
- ASPHALT[59] offers high precision applications in road construction and fleet management and logistics in the construction just-in-time process chain, and are expected to be early adopters of both EGNOS and Galileo in an important professional high value EU market. The 24-month project started on 1 February 2010 with a €1,018,072 grant.

[55] PROPHET: PRS Operations Performance Handy Evaluation Tool.
[56] FORTRESS: FORge of Tamper-RESistant Security module.
[57] PROTECTOR: PRS Operational Tool to Evaluate and Counteract Threats Originating from Radio-sources.
[58] ACCEPTA: ACCelerating EGNOS adoPTion in Aviation.
[59] ASPHALT: Advance galileo navigation System for asPHALt's fleeT machines.

- ATLAS[60] covers the definition, design, development and demonstration of an enhanced GNSS time and positioning authentication service to work alongside an existing LBS application. The 18-month project started on 1 February 2010 with a €271,917 grant.
- CIGALA[61] is developing ionospheric scintillation mitigation and countermeasures to be implemented and tested in professional multi-frequency multi-constellation GNSS receivers. The 24-month project started on 1 February 2010 with a €689,882 grant.
- CLOSE-SEARCH[62] will integrate in a small unmanned helicopter, a thermal sensor and a multisensor GPS-EGNOS-based navigation system with an Autonomous Integrity Monitoring capability, to support the search component of search-and-rescue (SAR) operations in remote, difficult-to-access areas and/or in time critical situations. The 18-month project started on 22 February 2010 with a €307,878 grant.
- CoSuDEC[63] will create a system for enhanced surveying of coastal waters through using standard navigation equipment, as an alternative to the traditional approach of using specialist Hydrographic surveyors and high precision instruments. The 24-month project started on 16 December 2009 with a €356,496 grant.
- COVEL[64] will develop the Lane Navigation Assistant (LNA) – an in-vehicle system which will enable lane-level positioning, lane-level navigation and lane-level traffic management especially in urban areas. The 24-month project started on 1 January 2010 with a €2,118,525 grant.
- EEGS[65] pretends to prove that the EGNOS coverage area could be extended (APV-I 99 per cent) to cover all Eastern Europe. Moreover, a SBAS signal will be available in Poland, Romania and Ukraine to demonstrate on-ground (at user level) that in fact the steps to upgrade EGNOS to provide such a service are ready to be implemented in the EGNOS programme. The 19-month project started on 1 January 2010 with a €599,943 grant.
- ENCORE[66] aims to develop a land management application to cover the following needs of the Brazilian market: -Geo-referencing: due to 10267/2001 Federal Law, all the 5 billion properties in Brazil must be linked to the Geocentric Reference System for the Americas (SIRGAS), whose objective is the standardisation of South America geodetic systems. The 24-month project started on 1 January 2010 with a €590,000 grant.
- ERSEC[67] will develop a measuring system - to be used on board of vehicles - able to output the position on the road map of the equipped vehicle and of all the obstacles (such as other vehicles, peoples and any kind of fixed or mobile objects) around it with a measurement accuracy of the order of 0.1 metres at a sampling rate of 100 Hz. The 22-month project started on 1 January 2010 with a €390,448 grant.
- ESESA[68] aims at supporting the technical definition of the extension of EGNOS service over South Africa and to provide the EU and South African authorities with a comprehensive institutional, financial and operational implementation plan. The 18-month project started on 1 February 2010 with a €289,970 grant.
- GAINS[69]: Galileo Advanced Innovation Services is aimed to implement effective Galileo Downstream Application Innovation Services by combining “Galileo Masters” for the identification of promising business ideas and the open innovation environments provided by the European Network of Living Labs (ENoLL). The 24-month project started on 15 December 2009 with a €877,684 grant.
- GENEVA[70] is aimed to develop an innovative application within the context of advanced driver assistance for high precision, reliable and certifiable use, contributing to the adoption

[60] ATLAS: Autenticated Time and Location for location based Applications and Services.
[61] CIGALA: Concept for Ionospheric-Scintillation Mitigation for Professional GNSS in Latin America.
[62] CLOSE-SEARCH: Accurate and safe EGNOS-SoL navigation for UAV-based low-cost SAR operations.
[63] CoSuDEC: Coastal Surveying of Depths with EGNOS to Enhance Charts.
[64] COVEL: Cooperative Vehicle Localization for Safe and Sustainable Mobility.
[65] EEGS: EGNOS Extension to Eastern Europe.
[66] ENCORE: Enhanced Code Galileo Receiver for land management in Brazil.
[67] ERSEC: Enhanced Road Safety by integrating EGNOS-Galileo data with on-board Control system.
[68] ESESA: EGNOS service extension to South Africa.
[69] GAINS: Galileo Advanced Innovation Services.
[70] GENEVA: Galileo / EGNOS Enhanced Driver Assistance.

of EGNOS/EDAS in the European automotive industry. The 24-month project started on 1 February 2010 with a €1,614,256 grant.

- GNSSmeter[71] develops a road pricing and pay per use insurance application system based on a vehicle on-board technology that can be integrated rapidly to an existing market product, integrating EGNOS/EDAS integrity and augmentation data as well as Galileo measurements. The 18-month project started on 1 February 2010 with a €493,081 grant.
- GOLDEN-ICE[72] aims at exploiting the EGNOS innovations in the field of winter services equipments (professional trucks and vehicles) with the objective to introduce advanced concepts in relation to salt spreading control, road safety and emergency. The 21-month project started on 1 January 2010 with a €478,650 grant.
- GRAIL-2[73] will develop and validate a GNSS based ETCS prototype/application in Rail Low Density Lines. The 24-month project started on 1 March 2010 with a €1,279,347 grant.
- GSARSED[74]. SAR/Galileo system has achieved the required performances proposed in the previous GISAR FP6 project. The following reasonable step is the demonstration of the service to final customers using the complete architecture. The 30-month project started on 26 January 2010 with a €1,151,850 grant.
- G-TRAIN[75] will create a framework at European level for higher education in the field of Satellite Navigation. For the II cycle of the Bologna process, the project will focus on the Master of Science, while for the III cycle of the Bologna process, Specializing Masters and Ph.D will be addressed. The 36-month project started on 15 January 2010 with a €543,736 grant.
- I2GPS[76] will develop a novel, integrated approach to the use of synthetic aperture radar interferometry (InSAR-data from GMES) and GNSS for use in the monitoring of subsidence, tectonic changes or other environmental hazards, which can only be identified by millimetric precision survey techniques. The 15-month project started on 28 January 2010 with a €339,203 grant.
- INCLUSION[77] will provide the Target Users (motor impaired people) with the possibility to experience end-to-end systems and pre-operative products able to guarantee their mobility in secure and safe conditions. The 20-month project started on 16 February 2010 with a €1,034,982 grant.
- LIVELINE[78] will develop a commercial, secure, vulnerable person tracking service based on EGNOS. The 18-month project started on 4 January 2010 with a €362,340 grant.
- LS4P[79] is an innovative GNSS service application targeted to sailing professionals taking advantage of EGNOS and European GNSS systems to provide precise and reliable positioning capabilities. The 18-month project started on 1 January 2010 with a €484,832 grant.
- PERNASVIP[80] aims to develop a GNSS-based mobility service dedicated to visually disabled pedestrians in urban environment, which meets the 4m level of accuracy and reliability they need for improving their day-to-day life autonomy. The 18-month project started on 15 January 2010 with a €370,414 grant.
- PUMA[81] aims to develop a solution to mitigate the increasing problem of GNSS jamming and spoofing in road applications. The 18-month project started on 15 December 2009 with a €289,802 grant.

[71] GNSSmeter: GNSS-based metering for vehicle applications and value added road services.
[72] GOLDEN-ICE: ImprovinG the efficiency Of saLt-spreaDing (de-icing) sErvices and emergeNcy call management on wInter professional vehiClEs.
[73] GRAIL-2: GNSS-based ATP System for Railway Low Density Lines.
[74] GSARSED: GALILEO SAR Early Service Demonstration.
[75] G-TRAIN: Supporting Education and Training in GNSS.
[76] I2GPS: Integrated Interferometry and GNSS for Precision Survey.
[77] INCLUSION: Innovative LBS for social/public dimension.
[78] LIVELINE: Live ICT services Verified by EGNOS to find Lost Individuals in Emergency.
[79] LS4P: Livesailing for Professionals.
[80] PERNASVIP: PERsonal NAvigation System for VIsually disabled People.
[81] PUMA: Precise and secUre autoMotive tracking.

- SafePort[82] will assist the move towards safe and efficient control of the transit of all vessels in a port from the port entrance to their berths and out again. In order to realise this aim we need to develop 2 separate but interdependent systems. The 24-month project started on 1 February 2010 with a €1,930,228 grant.
- SCUTUM[83] will launch and pursue a concrete path supporting EGNOS services adoption in the transport of dangerous goods in Europe. The 21-month project started on 18 January 2010 with a €1,407,188 grant.
- SIRAJ[84] will perform concrete actions in support the EGNOS service extension to the areas covered by the ACAC and ASECNA international organizations by promoting and demonstrating the benefits for a critical sector as civil aviation in a real environment and also by taking the necessary actions to develop a suitable framework for a solid EGNOS extension process in the ACAC and ASECNA regions. The 18-month project has a €830,000 grant.
- SMART-WAY[85] will develop a real public transport navigation system based on mobile devices that give passengers the possibility to act as they are used to do it with common navigation systems in their cars. The 24-month project started on 28 February 2010 with a €1,792,852 grant.
- SX5[86] will examine the best-possible use of the E5 broadband signal for scientific applications, implement and validate an application prototype for the scientific user community. The 24-month project started on 1 February 2010 with a €665,486 grant.

[82] SafePort: Safe Port Operations using EGNOS SoL Services.
[83] SCUTUM: SeCUring the EU GNSS adopTion in the dangeroUs Material transport.
[84] SIRAJ: SBAS Implementation in the regions ACAC and ASECNA.
[85] SMART-WAY: Galileo based navigation in public transport systems with passenger interaction.
[86] SX5: Scientific Service Support based on GALILEO E5 Receivers.