ORIGINAL

GSA/NP/09/12- "EGNOS SERVICE PROVISION"

Annex B to Tender Information Package

STATEMENT OF WORK

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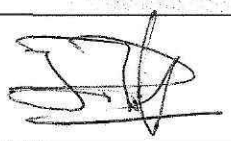
Issue: 1.0
Date: 5 June 2012

Approval

Approved by	Date	Signature
GNSS Exploitation Programme Manager of GSA	19/06/2012	

Change Log

Date	Issue	Change description
5th June 2012	1.0	Document creation

Table of Contents

List of Figures

I. INTRODUCTION

I.1. SUBJECT OF THE STATEMENT OF WORK

This Statement of Work (SOW) defines the work to be performed by the EGNOS Service Provider (ESP), referred to as the Contractor, for the European GNSS Agency (GSA), referred to as the Customer, for the execution of the Contract to provide the EGNOS Services associated with the delivery of EGNOS Signal and Data, as well as to provide other support services at EGNOS programme level (including deliverable services and documents). The Contractor shall complete this work in accordance with the terms and conditions of the EGNOS Service Provision contract and the requirements specified herein.

I.2. OVERVIEW OF THE EGNOS SERVICES AND ARCHITECTURE

The European Geostationary Navigation Overlay Service (EGNOS) is a Satellite-Based Augmentation System (SBAS) currently designed to improve the performance of the US Global Positioning System (GPS).

Through the signals broadcasted by the EGNOS geostationary satellites, EGNOS provides to the users:

- Corrections to the GPS errors due to atmospheric delays affecting the GPS signals and other GPS satellite errors. This results in improved position accuracy (down to 1-2 meters) compared to the accuracy when using GPS alone.
- Verification of the system's integrity, i.e. the level of confidence regarding the correctness of the location information supplied by the navigation system. In addition, it provides timely warnings when the system or its data should not be used for navigation.

EGNOS has been designed to offer the following 3 main services:

- Open Service (OS), freely available to any user in Europe equipped with appropriate GPS/SBAS-compatible receiver. The EGNOS Open Service is available since October 2009.
- Safety of Life Service (SoL) providing the most stringent level of Signal-In-Space (SIS) performance for application domains where safety is critical (civil aviation, maritime, etc.). The EGNOS Safety of Life Service was declared operational in March 2011.
- EGNOS Data Access Service (EDAS) providing real-time access to the data collected and generated by the EGNOS infrastructure.

The architecture of the EGNOS System is represented in Figure 1.

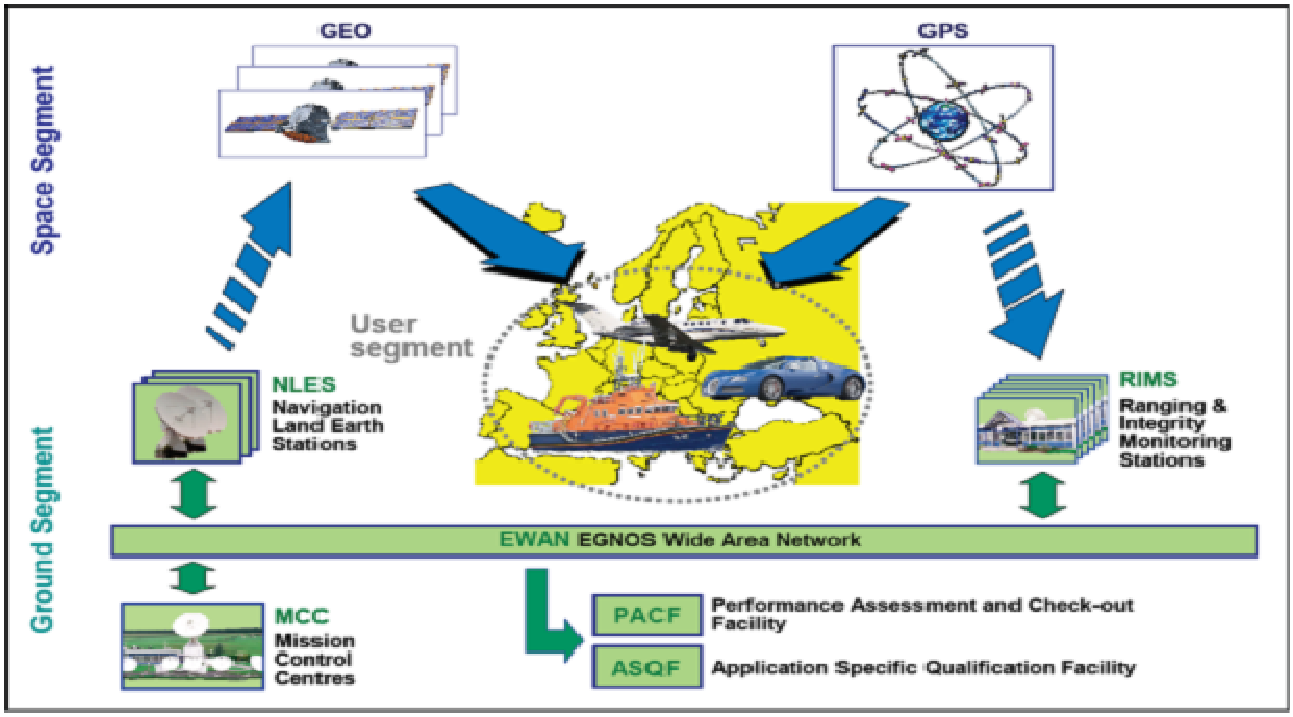


Figure 1: Overview of the current EGNOS System Architecture

The EGNOS System comprises a ground segment and a space segment.

The EGNOS ground segment comprises:

- A network of Ranging and Integrity Monitoring Stations (RIMS) deployed mainly over Europe and in North Africa the role of which is to collect GPS raw measurements;
- 4 Mission Control Centres (MCCs) which process the data received from the RIMS and in which integrity, differential corrections and ionospheric delays are computed by the Central Processing Facility (CPF);
- 6 Navigation Land Earth Stations (NLES) that transmit the augmentation signals uplink to the EGNOS geostationary satellites for broadcasting to users;
- EGNOS Wide Area Network (EWAN) which is the communication network for all the components of the ground segment;
- 2 additional facilities that support system operations and service provision and are operated by the current EGNOS Service Provider (ESSP SAS): Performance Assessment and Checkout Facility (PACF) and Application Specific Qualification Facility (ASQF).

The EGNOS space segment includes 3 (at the time of writing of this SOW) GEO satellites broadcasting corrections and integrity signals in real time in the L1

frequency band. At any point of time, an operational signal is typically broadcasted by 2 of the GEOs, ensuring a high level of redundancy over the whole EGNOS service area. The EGNOS space segment will be replenished over time in order to maintain this level of redundancy. Such evolutions will be transparent for end users.

I.3. FUNDAMENTAL OBJECTIVES

The general objective of the public sector for the EGNOS Service Provision Phase is to continue to provide the EGNOS SIS and associated services, with the level of performance adequate to meet the needs of the user communities, as defined by the mission requirements and applicable standards, and the agreed waivers to these documents.

With this general objective in mind, this SOW covers the EGNOS Service Provision Phase until the end of the Service Provision contract, during which the EGNOS system ***shall*** be operated and maintained at the level suitable to fulfil its currently defined mission. The SOW also covers a Handover Phase for the preparation of the Service Provision Phase.

The Service Provision Phase will be governed by the following overarching principles for the entire duration of the contract:

- That the EGNOS SIS and services (OS, SoL and EDAS) are provided by the Contractor continuously in a safe, efficient and sustainable manner.
- That the Contractor obtains and/or maintains the certificate to operate EGNOS (without safety incidents) as stipulated in the SOW.
- That the EGNOS system continues to be qualified for SoL applications, compliant with civil aviation standards (ICAO SARPs) over the ECAC area.
- That the Contractor operates in a recurrent mode the EGNOS service baseline according to qualified operational processes and procedures and to the Library of EGNOS Operations (LEO).
- That the Contractor maintains the EGNOS product in a state compatible with the provision of the EGNOS services for the entire duration of the contract, and taking due account of the long term service perspective for EGNOS (20 years).
- That the EGNOS system needs to be adapted, in order to continuously meet the evolving needs of its user base as required.

More specifically, the Contractor ***shall*** achieve the following main objectives in the course of the EGNOS Service Provision Contract:

- Support the definition of a long term EGNOS services roadmap.
- Support the rapid extension of EGNOS coverage.

- Support interoperability with other SBAS systems and standardisation activities.
- Establish direct communication links with users on the strategy of implementation of the EGNOS services.
- Foster the adoption of EGNOS in other domains in addition to civil aviation (i.e. maritime, road, railways).
- Monitor the system obsolescence and manage the maintenance of the EGNOS system.
- Maintain the performance of the services and improve the anomaly correction response time with industry.
- Mitigate the EU exposure to risks due to the exploitation of EGNOS by users.

I.4. EGNOS PROJECT/PROGRAMME ORGANISATION PRINCIPLES

The Contractor ***shall*** acknowledge and comply with the overall EGNOS programme organisation principles outlined here below.

The delivery of the EGNOS Signal-In-Space during the EGNOS Service Provision Phase starting on 1st January 2014 involves the following major actors of the public and private sector:

- The European GNSS Agency (GSA), acting under powers delegated by the European Commission (EC);
- The European Space Agency (ESA);
- The EGNOS Service Provider (ESP);
- The Industry Prime;
- The European Aviation Safety Agency (EASA);
- The ESP subcontractors essential for the delivery of the services.

The roles and relationships between the actors and the prime contractual frameworks are detailed later in this SOW as well as in the Change Management Process (CMP) document [AD-2].

I.5. OVERALL EXPLOITATION OF EGNOS

The scope of the EGNOS Service Provision contract is to deliver the EGNOS services to users. Various activities and interfaces are necessary to the ESP for achieving this task. These activities are all further specified in this SOW.

The EGNOS exploitation activities assigned to the ESP are introduced in Figure 2.

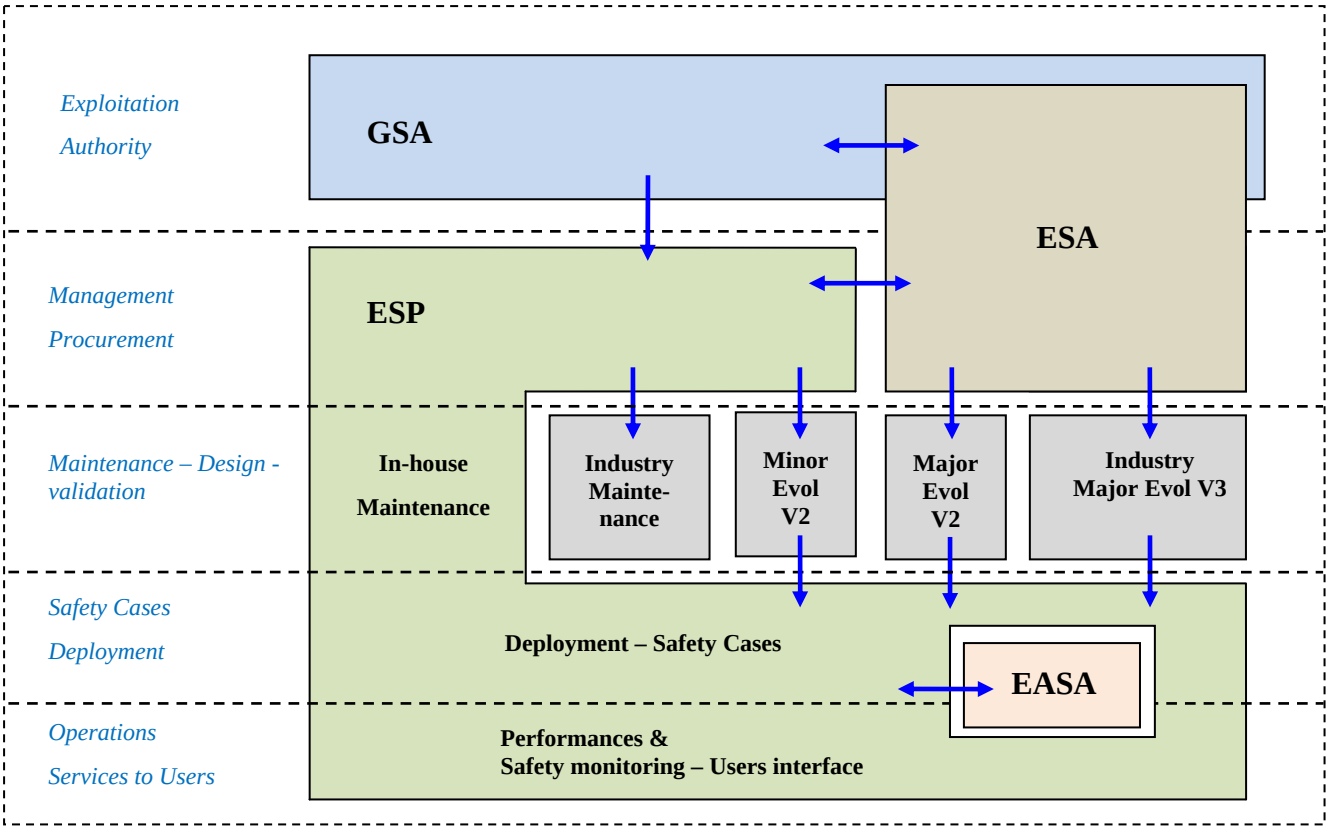


Figure 2: Overall EGNOS Service Provider Exploitation Activities

The evolutions of the system in its version 2 under exploitation are differentiated between the major evolutions of the EGNOS system V2 and V3 that follow a top down approach driven by system evolutions planned in advance, and the minor evolutions of the system V2 that are driven by the necessity to implement timely corrections of the underperformances of the system or improvements to its operability. This is further defined in the Change Management Process document [AD-2].

I.6. EGNOS SERVICES MAIN MILESTONES (2012-2017)

The EGNOS Service Milestones of the first years of the perspective 2014-2020 are presented in the following Figure 3.

In particular, the evolutions of the EGNOS system (called EGNOS System Releases - ESRs) are presented, together with the deployment of the RIMS that will allow the extension of the EGNOS coverage area of the services.

The Changes to the Safety of Life Service (numbered Change 1, 2, 3 and so forth) correspond to the milestones of successive declaration of changes of the

services, after presentation of the relevant Safety Cases to the certification authorities.

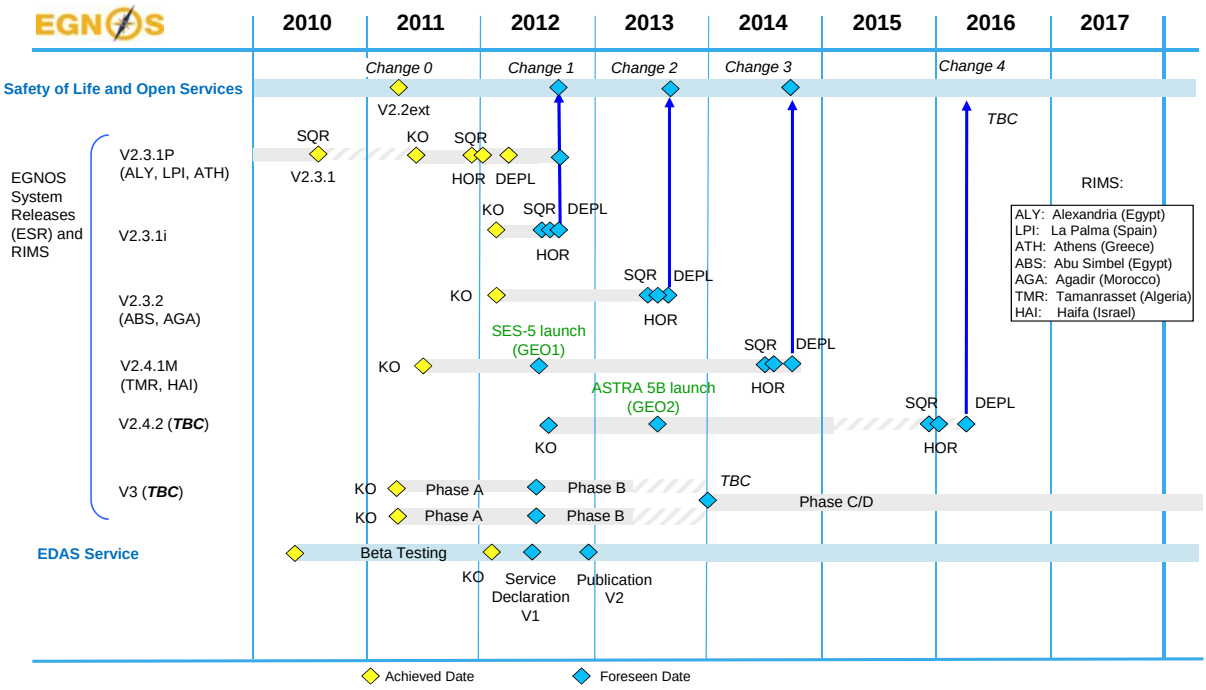


Figure 3: EGNOS Services Main Milestones (First Years)

The dates and colour codes of the milestones represent the situation at the time of launching the ESP tender.

I.7. SUBCONTRACTED ACTIVITIES

The scope of the services currently subcontracted by the EGNOS Service Provider is represented on the diagram below. The list of all the current EGNOS Service Provider subcontractors is provided in [AD-10].

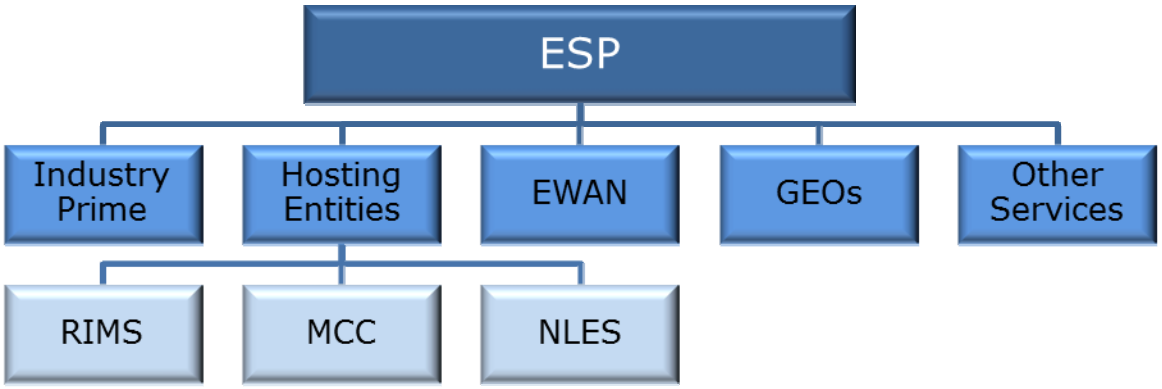


Figure 4: ESP Service Subcontractor Structure

I.8. HANDOVER TIMELINE

The timeline and the main milestones related to this contract are represented on Figure 5 below.

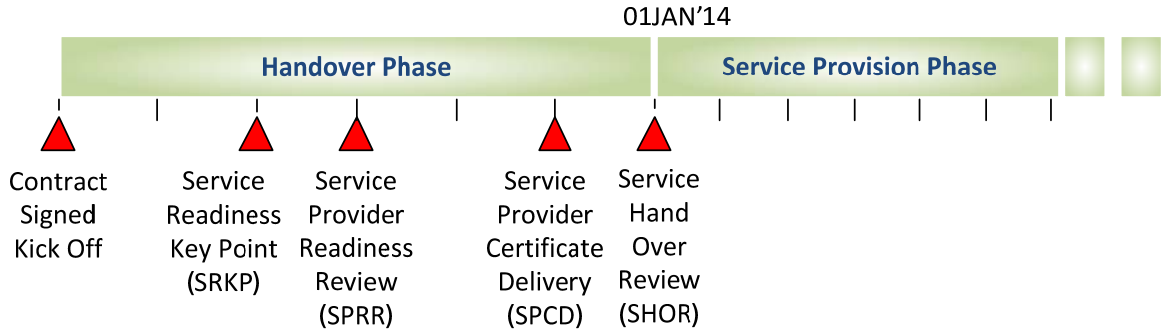


Figure 5: Handover Phase Timeline

This section presents the overview of the hand-over from the incumbent ESSP SAS to another ESP Contractor, in case this ESP Contractor would be awarded the contract. Following contract signature, there shall be a Handover Phase allowing the Contractor to get ready to take over the management and provision of EGNOS services from the ESSP SAS. The Handover Phase will be marked by a series of interim reviews and milestones prior to the 1st January 2014. These milestones are outlined below and defined in more details in the corresponding sections of this SOW.

- The Service Provider Readiness Review (SPRR) will be held no later than 3 /three/ months after the Contract Kick-Off with the purpose of assessing the capability of the Contractor to ensure a seamless transfer from the incumbent ESP for EGNOS Service Provision.
- Prior to the SPRR, a Service Readiness Key Point (SRKP) will be held with the Contractor. The purpose of the SRKP is for the Customer to assess whether the Contractor is on track with respect to the objectives of the handover, and to decide to go ahead with the SPRR.
- The Contractor is expected to have obtained certification to operate EGNOS no later than 30th November 2013 at a dedicated Service Provision Certificate Delivery (SPCD) milestone. The certifying authority will be the European Aviation Safety Agency (EASA).
- The outcome of the Handover Phase is analysed at the Service Hand Over Review (SHOR), where the readiness of the selected ESP to provide services for the EGNOS Service Provision Phase is reviewed and is subject to Customer approval.

The EGNOS Service Provision Phase will start on 1st January 2014.

The full Key Performance Indicators (KPI) regime will apply as of 1st January 2014.

I.9. ACRONYMS, TERMS AND DEFINITIONS

The acronyms used in this SOW are listed and defined in Appendix 3 to this SOW.

The definitions of the terminology used in this SOW are provided in Appendix 3.

The language used to define the various terms in this SOW is as follows:

- "Shall" is used to indicate a mandatory requirement.
- "Should" is used to indicate a preferred alternative but is not mandatory.
- "May" is used to indicate an option.
- "Will" and the present tense are used to indicate a statement of intention or fact.
- "Days" mean calendar days unless otherwise specified.

Each detailed requirement in this SOW is numbered using the naming convention "EGN-ESP-SOW-x.y-z", where:

- 'x' identifies requirements belonging to the same Work Package (WP);
- 'y' identifies the sub-package within the Work Package;
- 'z' identifies the number of the specific requirement.

Within each requirement subject, a separate statement of compliance ***shall*** be provided by the Contractor in the proposal for each use of the word 'shall'.

I.10. DOCUMENTS

The work ***shall*** be executed in conformance with the documents identified herein.

The list of documents defined in the List of Applicable and Reference Documents [Appendix 1], including applicable and reference documents therein, form a part of this SOW, based upon the latest revision in effect on the date of contract award unless otherwise specified.

I.10.1 APPLICABLE DOCUMENTS

The documents marked as "Applicable Documents" (ADs) in the List of Applicable and Reference Documents [Appendix 1] contain rights and obligations against which the Contractor ***shall*** state their compliance in the proposal. In case of inconsistencies between the documents, the order of precedence is the order in which documents are listed. Any such inconsistencies ***shall*** be brought to the attention of the Customer.

I.10.2 REFERENCE DOCUMENTS

The documents marked as "Reference Documents" (RDs) in the List of Applicable and Reference documents in Appendix 1 are given for information only and no compliance is requested from the Contractor in the proposal.

The Applicable and/or Reference document(s) relevant for a particular requirement is identified as *Input* under the requirement.

I.10.3 CONTRACTOR DELIVERABLE DOCUMENTS

The document deliverables expected from the Contractor are listed in Appendix 2 to this SOW.

The document deliverables for a given requirement are indicated as *Deliverable* under the requirement.

II. DETAILED REQUIREMENTS

The Contractor's proposal ***shall*** follow the Work Breakdown Structure (WBS) represented on Figure 6 below.

As illustrated in Figure 6, Level 1 is the overall EGNOS Services Provision, Level 2 represents the headings of the main Work Packages and Level 3 provides the breakdown within each Work Package.

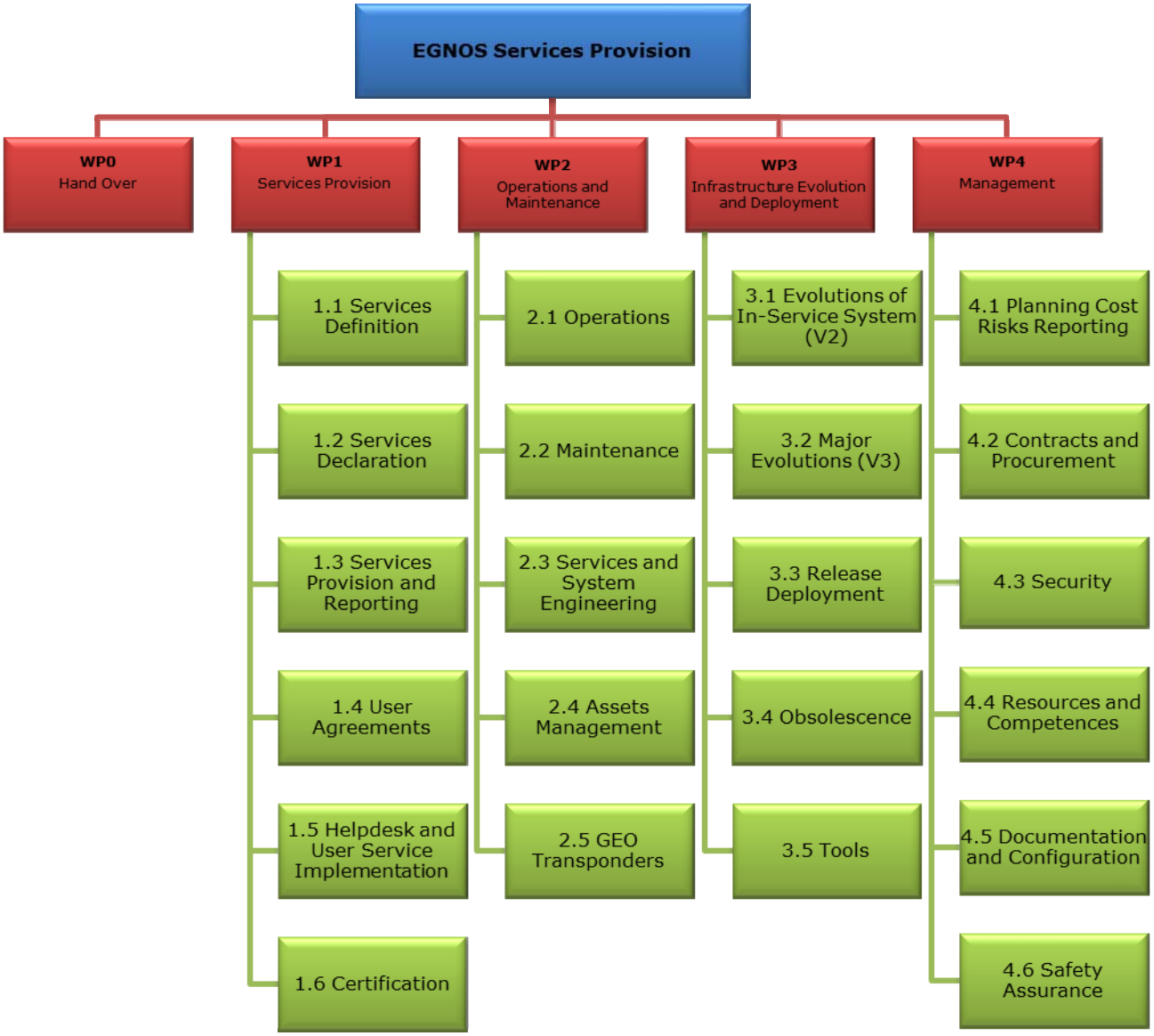


Figure 6: Work Breakdown Structure (WBS)

Modifications or deviations from this WBS ***shall not*** be allowed.

The detailed requirements for each Work Package are specified here below.

0 WORK PACKAGE 0 - HAND OVER

0.1 HAND OVER PHASE

Activities during the Handover Phase

EGN-ESP-SOW-0.1-001: The Contractor ***shall*** implement their "Integration Plan" during the Handover Phase.

EGN-ESP-SOW-0.1-002: The Contractor ***shall*** submit an "Integration Report" for review at the Service Provider Readiness Review (SPRR) and the Service Handover Review (SHOR). The "Integration Report" will be used as a basis to confirm the proper execution of all the activities foreseen in the "Integration Plan" submitted with the proposal. The Report should provide a clear status of all activities foreseen in the Plan, with the associated risks and mitigation actions proposed in case of deviation or anticipated deviation with respect to the plan.

Deliverable:

(1) Integration Report [DEL-1]

EGN-ESP-SOW-0.1-003: At the SPRR, the Contractor ***shall*** demonstrate their maturity to manage all Work Packages defined in this SOW and their degree of familiarisation with the operations of the EGNOS system.

EGN-ESP-SOW-0.1-004: For the purpose of demonstration of maturity at the SPRR, the Contractor ***shall*** operate EGNOS TEST based on “SPRR EGNOS Test Specifications”.

Input:

(1) SPRR EGNOS Test Specifications [AD-3]

Continuity of services

EGN-ESP-SOW-0.1-005: The Contractor ***shall*** ensure that there will be no interruption of the service when handing-over from the current Service Provision phase (ending on 31st December 2013) to the next, nominally on 1st January 2014.

EGN-ESP-SOW-0.1-006: At Kick-Off and at SPRR, the Contractor ***shall*** demonstrate that there is a continuous contractual coverage of all the subcontracted activities required to ensure the EGNOS SIS provision (e.g. subcontracts for MCC operations, hosting sites, network services, Product Support Services, GEO navigation transponder services).

Service Readiness Key Point

EGN-ESP-SOW-0.1-007: The Contractor ***shall*** submit a "SPRR Review Plan" prior to the SPRR, for review and approval by the Customer at a Service Readiness Key Point (SRKP). The purpose of the SRKP is for the Customer to

assess whether the Contractor is on track with respect to the objectives of the handover, and to decide to go ahead with the SPRR.

Deliverable:

(1) SPRR Review Plan [DEL-2]

EGN-ESP-SOW-0.1-008: The date of the SRKP is left for the Contractor to propose, but ***shall*** be at least 4 /four/ weeks before the planned SPRR date.

Service Provider Readiness Review

EGN-ESP-SOW-0.1-009: The Service Provider Readiness Review ***shall*** take place no later than 3 /three/ months after contract Kick-Off.

Provision of operations processes and procedures for the start of the contract

EGN-ESP-SOW-0.1-010: The Contractor ***shall*** provide, at SPRR, the operations processes and procedures they intend to use for the operation of the ESR 2.3.2.

Deliverable:

(1) ESP Operations Baseline [DEL-3]

Signature of EGNOS Working Agreements for service provision in civil aviation

Preamble: In the course of the service contract between the EC and the incumbent ESP (ESSP SAS) which expires on 31st December 2013, ESSP has signed EGNOS Working Agreements (EWAs) with a number of Air Navigation Service Providers (ANSPs) for the provision of the Safety of Life service to aviation users.

EGN-ESP-SOW-0.1-011: By SHOR, the Contractor ***shall*** assure that all EWAs as described above that have been signed (or that will have been signed by the end of the Handover Phase) are concluded and duly signed by the respective ANSP and the Contractor with an effective date of entry into force of the agreement as of 1st January 2014.

Inputs:

(1) EWA Template [RD-1]

(2) List of EGNOS Working Agreements [RD-2]

1 WORK PACKAGE 1 - SERVICES PROVISION

1.1 SERVICES DEFINITION

EGNOS coverage

EGN-ESP-SOW-1.1-012: The Contractor ***shall*** be responsible for the management of the steps related to the deployment of the EGNOS infrastructure in view of the extension of the EGNOS coverage, that are assigned to the Contractor according to the RIMS Implementation Process.

Input:

(1) RIMS Implementation Process [AD-4]

EGN-ESP-SOW-1.1-013: The Contractor ***shall*** draft and maintain in configuration the "EGNOS Coverage Evolution Roadmap" of EGNOS services, under Customer guidelines and approval, that will include the mapping with the in-service system roadmap and expected related performances improvements of the services.

Input:

(1) RIMS Implementation Process [AD-4]

Deliverable:

(1) EGNOS Coverage Evolution Roadmap [DEL-4]

EGNOS Mission

EGN-ESP-SOW-1.1-014: The Contractor ***shall*** provide support to the definition of the Mission for EGNOS.

Input:

(1) EGNOS Mission Requirement Document [AD-5]

EGN-ESP-SOW-1.1-015: The Contractor ***shall*** provide input to the "EGNOS Mission Evolution Roadmap", based on their knowledge and interactions with the EGNOS users.

The main objectives of the EGNOS Mission Evolution Roadmap are to:

• Identify and describe the potential EGNOS mission evolutions, as arising from EGNOS stakeholders;

• Characterise the priorities for the EGNOS user communities for the identified potential evolutions;

• Characterise the implementation impacts;

• Establish the long term vision of EGNOS mission evolutions.

Deliverable:

(1) ESP Inputs to the EGNOS Mission Evolution Roadmap [DEL-5]

EGNOS Service Implementation Roadmap

EGN-ESP-SOW-1.1-016: The Contractor ***shall*** define the "EGNOS Service Implementation Roadmap" for each EGNOS service, including the definition of the services, the declarations / notifications corresponding to changes in the services, and the reporting on the performances of these services.

Deliverable:

(1) EGNOS Service Implementation Roadmap [DEL-6]

SBAS standardisation

EGN-ESP-SOW-1.1-017: The Contractor ***shall*** provide support to the definition and the evolution of the standardisation of SBAS. In particular, support will be required to ensure that proposed changes to the standards do not impact the EGNOS services and to the definition of the new SBAS L5 services. There are a number of groups that work on these issues at the RTCA, ICAO and Interoperability Working Group (IWG), ad-hoc support will be requested in support of these meetings.

Note: Contractor's attendance to these meetings is not expected on a regular basis; rather remote support will be required.

EGNOS SIS Standardisation Evolution activities

EGN-ESP-SOW-1.1-018: The Contractor ***shall*** participate to the EGNOS SIS Standardisation Evolution activities for an effort not exceeding 0.5 FTE per year for the following contribution:

• Review of the "EGNOS SIS Standardisation Evolution Roadmap" that remains a document of the Customer, and includes:

- The Contractor's evolution requirements;
- The schedule and planning to achieve these requirements;
- The impact of these requirements on EGNOS users (i.e. the EGNOS service);
- The key milestones, meetings, etc. at which decisions of standardisation are expected to be made.

• Participation to the Customer's standardisation subcontracts and review of corresponding deliverables.

Support on interfaces with SBAS providers

EGN-ESP-SOW-1.1-019: The Contactor ***shall*** provide support to the Customer on interfaces with Service Providers of adjacent SBAS (such as FAA and JCAB) to ensure a seamless multi-regional SBAS service.

Service Definition Documents

Preamble: The Service Definition Documents (SDDs) for the EGNOS services (i.e. OS SDD, SoL SDD, EDAS SDD) are documents approved by the public sector.

EGN-ESP-SOW-1.1-020: The Contractor ***shall*** draft the Service Definition Document of the Open Service (OS SDD) which summarizes the capacity, performance and availability requirements of the OS and expresses clearly the commitment of the Contractor to deliver the services according to the requirements (availability, accuracy).

Input:

(1) OS SDD [RD-3]

EGN-ESP-SOW-1.1-021: The Contractor ***shall*** draft the Service Definition Document of the Safety of Life Service (SoL SDD) which summarizes the capacity, performance and availability requirements of the SoL and expresses clearly the commitment of the Contractor to deliver the services according to the requirements (availability, accuracy, continuity, integrity).

Input:

(1) SoL SDD [RD-4]

EGN-ESP-SOW-1.1-022: The Contractor ***shall*** draft the Service Definition Document of the EDAS Service (EDAS SDD) which summarizes the capacity, performance and availability requirements of both EDAS and the helpdesk and expresses clearly the commitment of the Contractor to deliver the services according to the requirements (availability, accuracy, continuity, integrity).

Input:

(1) EDAS SDD [RD-5]

1.2 SERVICES DECLARATION

Service Declaration of the Open Service

EGN-ESP-SOW-1.2-023: The Contractor ***shall*** provide the Customer with a declaration of changes of the Open Service (OS) after each new version of EGNOS system (assuming 1 /one/ release per year), with an update of the corresponding Service Definition Document (OS SDD).

Deliverable:

(1) OS SDD [DEL-7]

Service Declaration of the Safety of Life Service

EGN-ESP-SOW-1.2-024: The Contractor ***shall*** provide the Customer with a declaration of changes of the Safety of Life Service (SoL) after each new version of EGNOS system (assuming 1 /one/ release per year) with an update of the corresponding Service Definition Document (SoL SDD).

Deliverable:

(1) SoL SDD [DEL-8]

Service Declaration of the EDAS Service

EGN-ESP-SOW-1.2-025: The Contractor ***shall*** provide the Customer with a declaration of changes of the EDAS Service after each new version of EGNOS/EDAS system (assuming 1 /one/ release per year) with an update of the corresponding Service Definition Document (EDAS SDD).

Deliverable:

(1) EDAS SDD [DEL-9]

1.3 Services Provision and Reporting

Key Performance Indicators (KPIs)

EGN-ESP-SOW-1.3-026: The performance of the Contractor with respect to the provision of EGNOS SIS and services ***shall*** be measured by means of the Key Performance Indicators (KPIs).

The KPIs will cover two main areas:

• SIS and services technical performances;

• Users satisfaction, which will be monitored via a periodic survey performed by the Customer.

EGNOS Performance

EGN-ESP-SOW-1.3-027: The Contractor ***shall*** ensure the continuity of the EGNOS SIS, services and performances in compliance with the Key Performance Indicators defined in the KPI Definition Document [AD-1].

Input:

(1) KPI Definition Document [AD-1]

EDAS Performance

EGN-ESP-SOW-1.3-028: EDAS performance ***shall*** comply with the Key Performance Indicators defined in the KPI Definition Document [AD-1].

Input:

(1) KPI Definition Document [AD-1]

KPI Monitoring Plan

EGN-ESP-SOW-1.3-029: At SPRR, the Contractor ***shall*** finalise the "KPI Monitoring Plan" intended to describe how the KPI performance monitoring will be carried out and how an independent assessment will be ensured. In particular, the "KPI Monitoring Plan" identifies how the Contractor will monitor the performance of the system using the KPI requirements, and the methodology used. The KPI plan establishes the baseline plan against which the system's performance will be measured.

Deliverable:

(1) KPI Monitoring Plan [DEL-10]

Revision of KPIs

EGN-ESP-SOW-1.3-030: Along the EGNOS lifecycle, upgrades in the system may provide opportunities to revise a number of KPIs. The Contractor ***shall*** provide to the Customer their proposed revision of the KPIs before the deployment of each new ESR to be agreed with the Customer.

KPI Reporting

EGN-ESP-SOW-1.3-031: The Contractor ***shall*** report the achieved KPI performance in a "Service Provision Management Report" (SPMR) provided monthly to the Customer.

Input:

(1) Service Provision Management Report Template [RD-6]

Deliverable:

(1) Service Provision Management Report [DEL-11]

EGN-ESP-SOW-1.3-032: The SPMR ***shall*** contain as a minimum:

• General trends for each KPI (based on past reported values);

• Identification of potential improvements on the system design, the operational processes/procedures, or the management processes, which can be used to inverse negative trends.

Input:

(1) Service Provision Management Report Template [RD-6]

EGNOS Service Provision Management Meeting

EGN-ESP-SOW-1.3-33: The Contractor ***shall*** organise a monthly EGNOS Service Provision Management Meeting (SPMM), alternatively at Customer and Contractor premises.

EGNOS Service Provision Review with the Customer

EGN-ESP-SOW-1.3-034: The Contractor ***shall*** organise the Service Provision Review once a year, to address the following:

• Assess the performance of the Contractor and the Customer in the running of the contract, with a view to refine processes and interactions and re-assess the compliance to the contract and the SOW;

• Establish the up-to-date operation qualification technical baseline;

• Review and agree on potential changes to plans, processes, procedures (e.g. operational processes and procedures).

The purpose of the Service Provision Review is not to duplicate the other meetings and reviews defined in this SOW, but rather to allow all EGNOS stakeholders to review the overall status of the EGNOS Service Provision, and to ensure a proper maintenance of the operation qualification technical baseline.

In addition to the Contractor and the Customer, the Customer may invite external parties to participate to the Service Provision Reviews.

EGNOS Service Provision Review for external audience

EGN-ESP-SOW-1.3-035: The Contractor ***shall*** prepare and attend yearly Service Provision Reviews. The objectives of the Service Provision Review are:

• To present to EGNOS stakeholders the status of the EGNOS Service Provision;

• To present future plans for service provision taking into account the results from the "KPI Monitoring Plan", including the users satisfaction survey results.

Service provision guidelines for reporting

EGN-ESP-SOW-1.3-036: The Contractor ***shall*** define a gravity scale of events to be communicated to the Customer and users of the EGNOS system.

Input:

(1) ONCR Classification [RD-7]

Deliverable:

(1) Events Gravity Definition [DEL-12]

EGN-ESP-SOW-1.3-037: The Contractor ***shall*** define and submit for Customer approval at SHOR a "Communication Template" for notifying both the Customer and the users of the underperformances of all EGNOS services.

Deliverable:

(1) Communication Template [DEL-13]

EGN-ESP-SOW-1.3-038: The Contractor ***shall*** comply with the defined "Communication Template" during the Service Provision Phase.

EGNOS Performance Report

EGN-ESP-SOW-1.3-039: The Contractor ***shall*** provide a public "EGNOS Performance Report" every month.

Deliverable:

(1) EGNOS Monthly Performance Report [DEL-14]

Reporting of Services at users level

Preamble: The Customer's objective is to ensure a wide use of EGNOS by users in all transport modes. It is therefore key to have an accurate and updated knowledge of the EGNOS services (SoL, OS, EDAS) at user level. This information will be used as input to the EGNOS Adoption Plan, managed by the Customer.

EGN-ESP-SOW-1.3-040: The Contractor ***shall*** report on the use of the EGNOS services at user level.

1.4 USER AGREEMENTS

EGNOS Working Agreements (EWAs) for Service Provision in Civil Aviation

EGN-ESP-SOW-1.4-041: The Contractor ***shall*** ensure signature of EGNOS Working Agreements (EWAs) with relevant ANSPs in accordance with SES regulations.

Input:

(1) EWA Template [RD-1]

Working Agreements for Service Provision in other domains

EGN-ESP-SOW-1.4-042: The Contractor ***shall*** define, when required by law or when requested by the Customer, Working Agreements with relevant users (other than aviation) using the Safety of Life service.

EDAS Service Level Agreement

EGN-ESP-SOW-1.4-043: The Contractor ***shall*** finalise the Service Level Agreement (SLA) for the delivery of EDAS raw data and connectivity support to external users, based on the EDAS SDD and EDAS Service declaration.

Input:

(1) EDAS SDD [RD-5]

Deliverable:

(1) EDAS SLA [DEL-15]

1.5 HELPDESK AND USER SERVICE IMPLEMENTATION

Helpdesk

EGN-ESP-SOW-1.5-044: The Contractor ***shall*** provide users with, as a minimum:

• Service unavailability notices, including SIS interruptions due to planned maintenance, degradation of the service coverage area (e.g. due to RIMS failures);

• A public EGNOS Monthly Performance Report;

• Connectivity support as the Single Point Of Contact (SPOC) for both PTP and Internet users;

• Assistance in solving all connectivity issues with the users;

• Proactive monitoring of the health and status of the system and informing the users in case of system failures;

• Informing the users of any planned outages of the system as least 1 /one/ week in advance;

• Registration of new applications for the use of EDAS and coordination with the Customer regarding the approval for the connection;

• Technical support and tools to potential EDAS users to facilitate their first connection, comprising:

- Support on setup of the connection;
- The provision of the documentation package containing all information necessary to decode and use EDAS;
- The provision of the necessary optional software to collect the real-time data stream;
- The technical support for hardware software installation at the user end;

• Seamless integration of 2nd level support provided by the EDAS developers.

Inputs:

(1) ESSP Public Performance Report [RD-8]

(2) User Consultation-Helpdesk Report Template [RD-9]

(3) EDAS Technical Package [RD-10]

Deliverable:

(1) EGNOS Monthly Performance Report [DEL-14]

EGN-ESP-SOW-1.5-045: Upon request and with approval of the Customer, the Contractor ***shall*** provide users and developers communities with:

- Answers to requests from end users of EGNOS services related to service performance expected in different applications, type of receivers required per services, etc.;
- Customisation of the public performance report tailoring it to the different users communities;
- EDAS information package and documentation needed to decode and process the data received.

EGN-ESP-SOW-1.5-046: The above minimum helpdesk functions ***shall*** be provided as a minimum via a web site, and be subject to the KPIs defined in [AD-1].

Input:

(1) KPI Definition Document [AD-1]

EGN-ESP-SOW-1.5-047: The Contractor ***shall*** grant the Customer access to information regarding the number of users connected to EDAS, the number of users awaiting first connections and the number of users having terminated their connection.

EGN-ESP-SOW-1.5-048: The Contractor ***shall*** provide a helpdesk report every 6 /six/ months.

Deliverable:

(1) Helpdesk Report [DEL-16]

EGN-ESP-SOW-1.5-049: The helpdesk ***shall*** be reachable by phone.

EGN-ESP-SOW-1.5-050: The helpesk ***shall*** be reachable 24/7.

EGN-ESP-SOW-1.5-051: The resolution time ***shall*** be of maximum 3 /three/ working days.

Continuous improvement

EGN-ESP-SOW-1.5-052: The Contractor ***shall*** define and implement a "User Support Improvement Process" based on:

• Users satisfaction survey issued by the Customer;

• Periodic monitoring of helpdesk and technical users support;

• Other specific sources (e.g. specific audits) or Customer guidelines.

Deliverable:

(1) User Support Improvement Process [DEL-17]

Proactive monitoring

EGN-ESP-SOW-1.5-053: Based on feedbacks from the Customer's users satisfaction survey, on periodic market analysis and adoption status done by the Customer, on the feedbacks received in the helpdesk daily activity, the Contractor ***shall*** proactively monitor the performance levels versus users' expectations and user questions and satisfaction, in order to anticipate possible user dissatisfaction and propose measures to mitigate this risk (as per requirement *EGN-ESP-SOW-1.3-040*).

Input:

(1) Users Satisfaction Survey [RD-11]

EGN-ESP-SOW-1.5-054: Based on the above, the Contractor ***shall*** issue every 3 /three/ months and implement an "User Satisfaction Action Report" to define the actions to be taken in order to remove possible problems, to enhance identified areas of weaknesses and propose mitigation strategies.

Deliverable:

(1) User Satisfaction Action Report [DEL-18]

Registered users

EGN-ESP-SOW-1.5-055: The Contractor ***shall*** give to the Customer real time access to the database of the users registered to the user support web site.

Promotion actions in support of the Customer

EGN-ESP-SOW-1.5-056: The Contractor ***shall*** provide support to the Customer in the frame of the yearly EGNOS market development and adoption plan defined by the Customer. Related budget, objectives and KPIs will be defined at Q3 for the following year.

This support implies the realisation and production, under Customer's guidelines and approval, of:

• Technical and information documents tailored for specific applications, explaining EGNOS benefits and giving tools for a correct use;

• Technical articles for the EGNOS portal, based on R&D projects and other success stories;

• Realisation of stands and sponsorship in events selected by the Customer at the beginning of every year;

• Production of content for communication tools (such as promotional videos, brochures, multimedia tools) to be realised by the Customer;

• Provision of qualified technical experts to be present at the stands in case of conferences and exhibitions (this support ***shall*** be limited to 30 /thirty/ man days per year).

Support to EGNOS Multimodal Adoption Plan

EGN-ESP-SOW-1.5-057: The Contractor ***shall*** support the Customer in the implementation of the market entry and the adoption plan defined every year for aviation and other sectors. Related budget, objectives and KPIs will be defined at Q3 for the following year.

The support includes:

• Providing inputs to the "EGNOS Multimodal Adoption Plan" based on user needs collected by the Contractor;

• Implementing specific actions delegated at the beginning of each year by the Customer with the respective budget (i.e. supporting procedure preparation; convincing potential adopters such as regional airlines; supporting the recognition of EGNOS in maritime, road, rail, agriculture and other domains, etc.);

• Reporting on a yearly basis on the implementation of the actions.

Input:

(1) EGNOS Multimodal Adoption Plan [RD-12]

Deliverable:

(1) Report on Actions Implementation for EGNOS Multimodal Adoption [DEL-19]

Preparation of technical and market tools for adoption plan

EGN-ESP-SOW-1.5-058: The Contractor, in the framework of the users management and adoption plan defined every year by the Customer, ***shall*** realise specific tools that will be used to foster EGNOS adoption. Related budget, objectives and KPIs will be defined at Q3 for the following year.

EGN-ESP-SOW-1.5-059: The Contractor ***shall*** realise:

• Software development kit to facilitate the adoption of EGNOS and EDAS (at least 1 /one/ new application every year);

• Technical manual on how to implement EGNOS and EDAS at application level in different application sectors (at least 1 /one/ new manual every year);

• Technical demonstration of EGNOS performances, present ones and ones foreseen in the next evolution of the system, tailored to different application communities.

Advisory SBAS services in the Air Traffic Management domain

EGN-ESP-SOW-1.5-060: The Contractor ***shall*** provide advisory services on the implementation of SBAS in the Air Traffic Management (ATM) domain with the purpose to mitigate the risk exposure of the European Union in the use of the EGNOS Safety of Life service.

National Authorities in Civil Aviation

EGN-ESP-SOW-1.5-061: The Contractor ***shall*** inform the corresponding EU national authorities (CAA, NSA), public organisations and ANSPs having signed an EWA about the current and future coverage of the EGNOS system and its future evolution on a regular basis by submitting updates as a minimum once per year.

NOTAM Proposals service

Preamble: The EuroNOTAM tool is composed of two modules: prediction module and formatting module. The prediction module is managed by Eurocontrol. The formatting module is to be managed by the Contractor. The Contractor plays the role of architect for the NOTAM service.

EGN-ESP-SOW-1.5-062: The Contractor ***shall*** manage the NOTAM system so that it continues to work properly for accurate, timely and safe predictions of SIS or other issues.

NOTAM System Architect

EGN-ESP-SOW-1.5-063: The Contractor ***shall*** be responsible to secure, operate and improve the delivery of the service in accordance with the requirements. In particular this entails organising regular reviews and meetings with ESA, as well as analysing and justifying new architecture options for the NOTAM provision chain, and implementing the derived technical solution.

EGN-ESP-SOW-1.5-064: The Contractor ***shall*** assess the possible impacts and estimate the risks of new technical solutions onto the delivery of the service. As part of this role, the Contractor will continue to monitor, collect and assess the requirements necessary for a smooth delivery of the service (network, delivery options, interfaces, operability improvements, quality of the end-to-end service, etc.).

Deliverables:

(1) NOTAM Tool Evolution Roadmap [DEL-20]

(2) NOTAM Evolution Data Package [DEL-21]

Interfaces with users under EGNOS Working Agreements

EGN-ESP-SOW-1.5-065: The Contractor ***shall*** reinforce the communication with all types of users under the EGNOS Working Agreement on the performances of the EGNOS services in order to mitigate risks of accidents or claims for service disruptions.

Interface with the GNSS Service Centre

EGN-ESP-SOW-1.5-066: The Contractor ***shall*** establish an operational interface with the GNSS Service Centre (GSC) located in Madrid (Spain).

Input:

(1) GSC Operational Concept [RD-13]

Deliverable:

(1) Implementation Proposal for EGNOS-GNSS Service Centre Operations Interface [DEL-22]

Integration with the GNSS Service Centre

EGN-ESP-SOW-1.5-067: The Contractor ***shall*** establish an implementation proposal to migrate, to extend to Galileo OS/SOL/CS services and to operate the following operational functions at the GNSS Service Centre located in Madrid:

• EGNOS Helpdesk and User Services;

• EDAS interface.

Input:

(1) GSC Operational Concept [RD-13]

Deliverable:

(1) Implementation Proposal for Joint EGNOS-GNSS Service Centre Operations [DEL-23]

1.6 CERTIFICATION

Planning of certification activities for each new ESR deployment

EGN-ESP-SOW-1.6-068: The Contractor ***shall*** define and plan all activities required in order to maintain the certification status throughout the duration of this contract and in particular during the deployment of new ESRs.

Certification documentation

EGN-ESP-SOW-1.6-069: The Contractor ***shall*** respect all the current documentation interfaces established with the aviation regulatory authorities required to implement any change that may impact the safety of the service provided to EGNOS users. These interfaces are defined in PRO28 [RD-14].

Input:

(1) PRO28 [RD-14]

Safety documentation interfaces

EGN-ESP-SOW-1.6-070: The Contractor ***shall*** respect all safety documentation interfaces established previously with the European Commission and to be retained with the Customer. These documents are described in the ESSP management processes [RD-15].

Input:

(1) ESSP Management Processes [RD-15]

Quality and safety audit program

EGN-ESP-SOW-1.6-071: The Contractor ***shall*** plan and implement a quality and safety audit programme, including an audit schedule to ensure that the safety and quality management systems are executed for the provision of the EGNOS service as defined in the "Integration Plan".

Deliverable:

(1) Quality and Safety Audit Plan [DEL-24]

Audit Program

EGN-ESP-SOW-1.6-072: Independent external audits, as well as internal audits, ***shall*** be implemented.

EGN-ESP-SOW-1.6-073: The audits ***shall*** aim to assess the conformance to the quality and safety assurance plans, and to identify potential quality improvements.

EGN-ESP-SOW-1.6-074: The Customer reserves the right to participate to the external audit process.

Audit Process

EGN-ESP-SOW-1.6-075: The Contractor ***shall*** notify the Customer of each planned audit 1 /one/ month before its planned start.

EGN-ESP-SOW-1.6-076: The Contractor ***shall*** provide to the Customer the audit plan and checklist.

EGN-ESP-SOW-1.6-077: The Contractor ***shall*** provide the audit report no later than 1 /one/ month following the completion of the audit.

2 WORK PACKAGE 2 - OPERATIONS AND MAINTENANCE

2.1 OPERATIONS

MCC Operations

EGN-ESP-SOW-2.1-078: The Contractor ***shall*** ensure that the required EGNOS Mission Control Centres (MCCs) are operated and maintained following the qualified operational plans, processes and procedures and by qualified staff, so as to satisfy the Key Performance Indicators defined in [AD-1].

Inputs:

(1) KPI Definition Document [AD-1]

(2) ESSP Operations Baseline [RD-16]

RIMS Operations

EGN-ESP-SOW-2.1-079: The Contractor ***shall*** ensure that the Ranging and Integrity Monitoring Stations (RIMS) are operated and maintained following the qualified operational plans, processes and procedures and by qualified staff, so as to satisfy the Key Performance Indicators defined in [AD-1].

Inputs:

(1) KPI Definition Document [AD-1]

(2) ESSP Operations Baseline [RD-16]

NLES Operations

EGN-ESP-SOW-2.1-080: The Contractor ***shall*** ensure that the Navigation Land Earth Stations (NLES) are operated and maintained following the qualified operational plans, processes and procedures and by qualified staff, so as to satisfy the Key Performance Indicators defined in [AD-1].

Inputs:

(1) KPI Definition Document [AD-1]

(2) ESSP Operations Baseline [RD-16]

EWAN Operations

EGN-ESP-SOW-2.1-081: The Contractor ***shall*** ensure that the EGNOS Wide Area Network (EWAN) is operated and maintained following the qualified operational plans, processes and procedures and by qualified staff, so as to satisfy the Key Performance Indicators defined in [AD-1].

Input:

(1) KPI Definition Document [AD-1]

GEO transponder operation

EGN-ESP-SOW-2.1-082: Through the execution of the GEO transponder lease contract, the Contractor ***shall*** ensure that all operational functions of the geostationary transponders are operated and maintained following the qualified operational plans, processes and procedures, so as to satisfy the Key Performance Indicators defined in [AD-1].

Note: It is understood that the provision of GEO communication services should be leased from a third party.

Input:

(1) KPI Definition Document [AD-1]

Support Facilities Operations

EGN-ESP-SOW-2.1-083: The Contractor ***shall*** ensure that the Performance Assessment Checkout Facility (PACF) and the Application Specific Qualification Facility (ASQF) are operated and maintained following the qualified operational plans, processes and procedures and by qualified staff, so as to satisfy the Key Performance Indicators defined in [AD-1].

Inputs:

(1) KPI Definition Document [AD-1]

(2) ESSP Operations Baseline [RD-16]

EDAS Operations

EGN-ESP-SOW-2.1-084: The Contractor ***shall*** operate and maintain the EGNOS Data Access Server (EDAS) according to the EDAS Operating Manual [RD-17] and ensuring that the EDAS KPIs defined in [AD-1] are met.

Inputs:

(1) EDAS Operating Manual [RD-17]

(2) KPI Definition Document [AD-1]

EGNOS operations on a qualified system and operations baseline

EGN-ESP-SOW-2.1-085: The Contractor ***shall*** maintain a qualified operations baseline respecting the requirements within the Library of EGNOS Operations (LEO).

Inputs:

(1) ESSP Operations Baseline [RD-16]

(2) LEO Operations [AD-6]

(3) LEO Maintenance [AD-7]

Maintenance of the qualification status throughout the service contract

EGN-ESP-SOW-2.1-086: The Contractor ***shall*** regularly review their operations processes and procedures and adopt the necessary modifications following:

• Their standard processes of continuous improvement of the operations processes and procedures, for the current EGNOS service baseline;

• The deployment in operations of new ESRs provided to the Contractor as part of EGNOS Product updates.

Continuous improvement of operations

EGN-ESP-SOW-2.1-087: As part of their existing continuous improvement processes, the Contractor ***shall*** seek to improve their operations processes and

procedures in order to improve the service provision in terms of safety, quality of services, or operational costs.

EGN-ESP-SOW-2.1-088: To that end, the Contractor ***shall*** produce and maintain an "Operations Evolution Plan", containing the set of major changes to the operations processes and procedures which the Contractor proposes to implement, including:

• A detailed description of the required change in the operations processes and procedures;

• A detailed justification for the change, in particular identifying its impacts:

- At user level, on its existing and future user base;
- On the overall safety and security of the service provision;
- On the overall cost of the service provision.

• A prioritisation of all proposed changes, in particular highlighting the proposed changes which are most critical.

Deliverable:

(1) Operations Evolution Plan [DEL-25]

EGN-ESP-SOW-2.1-089: The Contractor ***shall*** submit to the Customer for approval the changes proposed in the "Operations Evolution Plan".

Deliverable:

(1) Proposed Operations Changes [DEL-26]

Site Hosting Services environmental conditions

EGN-ESP-SOW-2.1-090: The Contractor ***shall*** maintain and regularly assess the local environmental conditions at each hosting site, including:

• Power supplies;

• Temperature control;

• Security / safety features;

• Sky visibility (in particular for RIMS, NLES);

• Multipath conditions (in particular for RIMS, NLES);

• Interference conditions (in particular for RIMS, NLES).

Input:

(1) Site IAR [AD-8]

Deliverable:

(1) Site Environment Report [DEL-27]

Site Surveys geodetic conditions

EGN-ESP-SOW-2.1-091: The Contractor ***shall*** regularly assess and update the geodetic positions of the NLES and RIMS antennas, in accordance with their qualified processes and procedures. This includes:

• Re-computation of all EGNOS coordinates and checking of coordinates changes;

• Update of all EGNOS coordinates in the CPF;

• Re-computation of concerned coordinates in case a new RIMS is deployed or a change in RIMS site modification occurred, as well as CPF update;

• Re-computation of coordinates (and CPF update if necessary), in case a RIMS site modification introduces a minor controlled change in antenna position.

EGNOS test platforms operations

EGN-ESP-SOW-2.1-092: The Contractor ***shall*** ensure that the EGNOS TEST platform and subsystems are available and maintained in nominal conditions, i.e. the SIS from the geostationary transponder used with EGNOS TEST meets the performance targets set by the Key Performance Indicators of [AD-1]. This requirement does not apply when:

• EGNOS TEST is used for operator training;

• EGNOS TEST is used during the deployment process of a new ESR for the definition of updates to the operational processes and procedures and associated qualification;

• EGNOS TEST is used by the Industry Prime during the AIVQ activities for a new ESR.

EGN-ESP-SOW-2.1-093: The Contractor ***shall*** establish and maintain a plan defining the access time and sharing of the EGNOS test platforms (in particular EGNOS TEST) for the different users (operator training, system upgrades qualification).

Deliverable:

(1) EGNOS Test Platform Use Plan [DEL-28]

2.2 MAINTENANCE

Preamble: The Maintenance activities are part of the Product Support tasks that the Contractor is expected to conduct. The term 'Product Support' describes the set of activities that can be initiated by the Contractor, and that affect the operation and maintenance of the current configuration of the EGNOS Product. In this SOW, the Product Support activities are referred to as 'services' because the technical activities that can be conducted are executed directly in-house by the Contractor, or provided to the Contractor by the Industry Prime and

subcontractors in charge of the design, qualification and maintenance of the EGNOS Product as a pre-defined set of specific tasks.

The concept of maintenance is based on the definition of a maintenance catalogue called "Product Support Services catalogue" or a "PSS catalogue". The PSS catalogue defines the activities that can be performed by the Contractor and the system components (hardware and software) for which the Contractor is entitled to perform maintenance activities without the need for re-qualification at system level.

The minimum set of maintenance Product Support activities comprises:

• Hardware maintenance and repair;

• Software maintenance;

• Management of EGNOS Product obsolescence and spares;

• Participation to the Integrated Engineering Team (IET), described further below.

The term 'maintenance' is understood to cover all modifications to the EGNOS hardware and software which may be required to sustain the nominal operation of EGNOS and the provision of the SIS, but which do not require a full re-qualification at system level. The maintenance of the services impacting the qualification of the system is addressed under other sections of this SOW.

The routine maintenance activities are triggered when the Contractor detects and isolates a fault in the EGNOS system. By applying the qualified Fault Detection, Isolation and Recovery (FDIR) processes, the Contractor may succeed in restoring the nominal behaviour of the system. However, the recovery of some faults may require intervention of the Industry Prime for:

• Diagnostic and isolation of the fault;

• Correction of software errors, including the regression testing and factory qualification of the software unit after correction;

• Repair or replacement of failed hardware subsystems, including the regression testing and factory qualification of the hardware unit after correction;

• Re-integration of the corrected unit (hardware or software) in the EGNOS service baseline.

The Contractor participates in the Integrated Engineering Team (IET) which supports the process of assessing whether a recovery action requires a system re-qualification or not.

General maintenance requirements

EGN-ESP-SOW-2.2-094: From its current qualified baseline configuration, the Contractor ***shall*** maintain the EGNOS Product in a state compatible with the

provision of the EGNOS SIS and Services described in [RD-3], [RD-4], [RD-5] and in compliance with the target KPIs [AD-1AD-1], throughout the entire duration of the contract, and with no impact (from a user perspective) during evolution phases.

Inputs:

(1) OS SDD [RD-3]

(2) SoL SDD [RD-4]

(3) EDAS SDD [RD-5]

(4) KPI Definition Document [AD-1]

(5) CSAR [RD-18]

EGN-ESP-SOW-2.2-095: Based on the required activities, the actors involved in the maintenance process and their technical competences, the Contractor ***shall*** implement the maintenance of the EGNOS Product within the 3 main levels described below:

• First Line Maintenance (FLM): activities aiming at ensuring that EGNOS assets are properly repaired and maintained following the maintenance processes and procedures;

• Second Line Maintenance (SLM): consisting of remote, in-depth fault analysis and troubleshooting in order to identify the root cause of the problem and determine the appropriate solution;

• Third Level Maintenance (TLM): actions encompassing mainly major problem resolution.

EGN-ESP-SOW-2.2-096: The Contractor ***shall*** provide a description of the proposed scope and organisation of each maintenance level.

EGN-ESP-SOW-2.2-097: The Contractor ***shall*** base their activities on the PSS catalogue currently in use [AD-9].

Input:

(1) PSS Catalogue [AD-9]

EGN-ESP-SOW-2.2-098: In case the Contractor considers that the current PSS catalogue includes services that are not applicable in the context of their overall maintenance concept, they ***shall*** propose changes to the content of the catalogue by providing justification as to the relevance and efficiency of the proposed changes.

Input:

(1) PSS Catalogue [AD-9]

EGN-ESP-SOW-2.2-099: Additional tasks may be added to the PSS catalogue during the execution of the contract, upon proposal from the Contractor or by request from the Customer and subject to acceptance by the Industry Prime, in which case the Contractor and the Customer ***shall*** jointly approve the updated PSS catalogue before such new tasks are undertaken by the Contractor.

Input:

(1) PSS Catalogue [AD-9]

EGN-ESP-SOW-2.2-100: In addition to the specific maintenance activity reports described in the corresponding sections of this SOW, the Contractor ***shall*** provide a maintenance activity report every 6 /six/ months including details on the status of all maintenance activities over the past reporting period as well as a forecast of the activities planned for the next reporting period.

Deliverable:

(1) Maintenance Activity Report [DEL-29]

EGN-ESP-SOW-2.2-101: The Contractor ***shall*** ensure that the maintenance processes are integrated smoothly with the operations and logistical support processes, in order to comply with the overall repair time targets defined in [AD-1].

EGN-ESP-SOW-2.2-102: The Contractor ***shall*** maintain the technical interfaces with the Industry Prime, via the Integrated Engineering Team (IET) processes as described in section 2.2 of this SOW.

EGN-ESP-SOW-2.2-103: The Contractor ***shall*** also establish a close engineering collaboration with their subcontractors providing the network services, the GEO transponder services and the logistics services, in order to ensure the overall objectives of the maintenance activities.

Corrective maintenance

EGN-ESP-SOW-2.2-104: The Contractor ***shall*** ensure that the staff resources, management and processes applied to the maintenance of EGNOS hardware are compatible with the targets defined by the Maintenance Services KPIs [AD-1].

Input:

(1) KPI Definition Document [AD-1]

EGN-ESP-SOW-2.2-105: The Contractor ***shall*** ensure that Operational Non Conformance Reports (ONCRs) raised through the existing (and qualified) operational processes are analysed in terms of criticality, security vulnerability and risks, design, implementation effort, implementation schedule, release and associated verification plan.

EGN-ESP-SOW-2.2-106: The Contractor ***shall*** present to the Customer, at dedicated meetings, their plans for hardware maintenance implementation, giving priority to critical maintenance actions. The term 'critical' ***shall*** cover ONCRs which have a safety impact.

EGN-ESP-SOW-2.2-107: In case that the investigation of the failed hardware concludes that repair time is incompatible with the KPIs defined in [AD-1], the Contractor ***shall*** notify the Customer of this incompatibility, providing a technical justification, a repair implementation plan specifying the expected repair time, and an analysis of the impact at user level of the unavailability of the hardware during the repair time.

Deliverable:

(1) Repair Plan [DEL-30]

EGN-ESP-SOW-2.2-108: The implementation of the proposed repair plan ***shall*** be subject to Customer approval.

EGN-ESP-SOW-2.2-109: The Contractor ***shall*** ensure that the pool of hardware spares available to replace failed components (under repair) is sufficient to maintain the overall service performance and to guarantee that the restoration times for all EGNOS subsystems fulfil the KPIs described in [AD-1].

EGN-ESP-SOW-2.2-110: The Contractor ***shall*** ensure that the hardware spares pool is compatible with the "Obsolescence Management Plan", i.e. that the number of hardware spares for an obsolete component is sufficient to cover the maintenance needs for that component until it is replaced, as per the schedule defined in the "Obsolescence Management Plan".

Input:

(1) Obsolescence Management Plan [RD-19]

EGN-ESP-SOW-2.2-111: The Contractor ***shall*** provide a "Hardware Maintenance Activity Report" every month, as part of the SPMR.

Deliverable:

(1) Hardware Maintenance Activity Report [DEL-31]

EGN-ESP-SOW-2.2-112: The Contractor ***shall*** ensure that the staff resources, management and processes applied to the maintenance of EGNOS software are compatible with measurable targets as defined in [AD-1].

EGN-ESP-SOW-2.2-113: The Contractor ***shall*** present to the Customer their plans for software maintenance implementation, giving priority to critical maintenance actions. The term 'critical' ***shall*** cover ONCRs which have a safety impact.

EGN-ESP-SOW-2.2-114: The Contractor ***shall*** ensure that the corrective maintenance on COTS software follows the REX process. If the maintenance of

COTS software includes replacement or reconfiguration, then a complete safety assessment should be exercised and documented to ensure that the Development Assurance Level (DAL) allocation is respected.

Input:

(1) REX Process [RD-20]

EGN-ESP-SOW-2.2-115: The Contractor ***shall*** provide monthly a "Software Maintenance Activity Report" as part of the SPMR, presenting:

• Number of open / closed Software Problem Reports (SPRs);

• Minimum / average / maximum time for the software fixes.

Deliverable:

(1) Software Maintenance Activity Report [DEL-32]

Preventive maintenance

EGN-ESP-SOW-2.2-116: The Contractor ***shall*** put in place appropriate preventive maintenance measures (e.g. periodic inspections, non-destructive testing, preventive replacement of components) in order to improve the lifetime of the EGNOS components and to avoid as much as possible any unplanned maintenance activities.

EGN-ESP-SOW-2.2-117: The Contractor ***shall*** provide a progress report on the status of performed and planned preventive maintenance activities every month as part of the SPMR.

Deliverable:

(1) Preventive Maintenance Progress Report [DEL-33]

EGN-ESP-SOW-2.2-118: The Contractor ***shall*** provide a summary report of the results of the preventive maintenance activities over the past reporting period and recommendations on actions to be launched for correction of hardware or other issues, every 6 /six/ months.

Deliverable:

(1) Preventive Maintenance Summary Report [DEL-34]

Provision of spares

EGN-ESP-SOW-2.2-119: The Contractor ***shall*** plan and procure the spares needed for the exploitation of the in-service EGNOS system at least 5 /five/ years ahead.

Participation to the Integrated Engineering Team

EGN-ESP-SOW-2.2-120: The Contractor ***shall*** set up an Integrated Engineering Team (IET), including the Contractor and the Industry Prime, to cover the following high level tasks:

• Analysis of Observation Reports (ORs) from the Contractor and Operational Requests For Change (ORFCs);

• Participation to expert groups ("task forces") on specific EGNOS subsystem;

• Review and categorisation of system events;

• Support to the update and validation of operational processes and procedures;

• Support to the use and maintenance of test platforms (e.g. Assembly, Integration and Verification - AIV platform).

EGN-ESP-SOW-2.2-121: The Contractor ***shall*** review the above tasks list and identify the set of tasks and responsibilities of the IET.

EGN-ESP-SOW-2.2-122: IET tasks are considered to be a PSS service, and as such the process of adding new tasks to the IET or modifying existing tasks of the IET ***shall*** follow the rules defined in the "PSS catalogue".

EGN-ESP-SOW-2.2-123: The Contractor ***shall*** inform the Customer of all IET meetings (in advance of the meeting). The Customer reserves the right to participate to these meetings.

2.3 SERVICES AND SYSTEM ENGINEERING

Logistics services

EGN-ESP-SOW-2.3-124: The Contractor ***shall*** ensure that all EGNOS ground facilities are supported by a logistical support at the level of performance reflected by the Key Performance Indicators defined in [AD-1].

Site Hosting Services

Preamble: As described in the Tender Specifications, the Contractor will have delivered in their proposal an "Infrastructure Rationalization Plan", which will be based on the assessment of the current EGNOS architecture. It is expected that this plan will be iterated from Kick-Off to SHOR in order to provide the Customer by SHOR with a clear understanding of the modifications proposed to be implemented, the timing and the migration scenario that will be applied.

EGN-ESP-SOW-2.3-125: The Contractor ***shall*** finalise the "Infrastructure Rationalization Plan" for review at SPRR and implementation after Service Hand Over. This plan will be approved by the Customer at SHOR.

Deliverable:

(1) Infrastructure Rationalization Plan [DEL-35]

Participation to S-CCB

EGN-ESP-SOW-2.3-126: As a member of the EGNOS System and Service Change Control Board (S-CCB), the Contractor ***shall***:

• Prepare and organise the EGNOS S-CCB meetings;

• Actively participate to the EGNOS S-CCB meetings and in particular present their inputs and views on the changes to the EGNOS System via the SPRD requirements or any other relevant service provision configured topics;

• Conduct the necessary follow-up actions agreed at the S-CCB meetings.

Input:

(1) Change Management Process [AD-2]

EGNOS System and Service Change Management

EGN-ESP-SOW-2.3-127: The Contractor ***shall*** organise the System and Service change management process as described in the [AD-2].

Input:

(1) Change Management Process [AD-2]

System and Service Engineering

EGN-ESP-SOW-2.3-128: The Contractor ***shall*** create / maintain System and Service Engineering Team(s) together with the Customer and the European Space Agency (ESA) under the specific Terms of Reference [RD-44], in order to review regularly the status of the system performance, the space segment, the system design, the operations and service provision, the certification and safety, system testing and qualification, anomalies / observations, and the Return of EXperience (REX) the purpose of which is to continously improve the design and the services and provide recommendations to the S-CCB.

Underperformances of the Signal-In-Space impacting the system design

EGN-ESP-SOW-2.3-129: The Contractor ***shall*** manage the underperformances of the Signal-In-Space by tracking any observations affecting the system performances and the services as follows:

- Continuous monitoring of the performances of the SIS;
- Characterisation of the issue and drafting of Observation Report (OR) notifying the observed underperformance of the SIS when compared to the Industrial Commitment of the qualified release;
- Evidence of operations in accordance to the Library of EGNOS Operations (LEO) of the qualified release;
- Identification of the high level specifications of the change;

- Immediate notification to the Customer with a proposal of notification to users;
- Request for activation and participation to dedicated Task Force (such as the Nav-Chain Task Force) led by ESA and by the Customer;
- Participation to the specification of the change and to the resolution plan with Industry under ESA lead;
- Procurement of the corrections following the principles defined later in this SOW;
- Notification strategy to users so that users understand and mitigate the situation clearly and transparently;
- Maintenance of a summary report of all open ORs with the status of associated correction plan and the notification to users.

Anticipation and mitigation of potential engineering issues

EGN-ESP-SOW-2.3-130: The Contractor ***shall*** anticipate and mitigate the future potential engineering issues as follows:

- Anticipation of the future possible bad operations or underperformances that may affect the services in the future via an active participation to engineering teams, and to all Industrial procurement reviews, release development and qualification milestones;
- Notification to the Customer on any escalation design topics or risks related to the system design and its operations that are affecting the services, following the notification rules defined in the [AD-2];
- Critical preparation and review of the definition of all system evolutions including obsolescence needs and related specifications to be addressed at the System and Service CCB;
- Elaboration, implementation, and notification of operational workarounds as mitigations actions.

2.4 ASSETS MANAGEMENT

EGNOS Inventory

Preamble: As owner of the EGNOS assets, the European Union has the duty to ensure an accurate tracking of the assets. In their role of Service Provider, and as per WP 2.1 and WP 2.2, the Contractor is the one actually managing the daily movements of the assets. These movements (and creation/disposal) must be adequately tracked by the Contractor and reported to the Customer on a quarterly basis.

EGN-ESP-SOW-2.4-131: The Contractor ***shall*** maintain an up-to-date inventory of all tangible and intangible assets related to the EGNOS system.

EGN-ESP-SOW-2.4-132: The assets inventory ***shall*** be registered in an IT system (hereafter referred to as an "asset management system") allowing for the recording of assets in accordance with the International Public Sector Accounting Standards (IPSASs).

EGN-ESP-SOW-2.4-133: For each asset recorded in the assets inventory the Contractor ***shall*** provide as a minimum the following information, as well as any other information included in the "Current EGNOS Inventory":

- Identification number;
- Serial number;
- Part number;
- Asset description;
- Asset location;
- Subsystem;
- Property owner;
- Date of listing in the inventory;
- Date of acquisition;
- Identification of the supplier;
- Acquisition price (purchase price and any cost directly attributable);
- Estimate of the cost of dismantling an asset (only if the obligation exists);
- Source of financing (the contract or work package under which the asset was procured);
- Replacement costs;
- Estimated life duration;
- Residual value (if any);
- Depreciation rate;
- General nomenclature classification code (according to the EC Amortisation Table);
- Status (e.g. operational/decommissioned/disposed).

Input:

(1) Current EGNOS Inventory [RD-21]

Deliverable:

(1) EGNOS Inventory [DEL-36]

EGN-ESP-SOW-2.4-134: The Contractor ***shall*** provide to the Customer the "EGNOS Inventory" on a quarterly basis and on demand. In particular, by no later than 15th January of the subsequent calendar year the Contractor should provide to the Customer the inventory as of 31st December of the respective year.

Deliverable:

(1) EGNOS Inventory [DEL-36]

EGN-ESP-SOW-2.4-135: The asset management system ***shall*** provide the following functionality:

- Recording of any subsequent capitalisable costs related to the assets, depreciation charge, impairment losses and reversals, write-off charges and gains/losses on disposal;
- Capacity to deliver reports on additions, depreciation charges disposals, transfers, impairment losses recognised and reversed, in a given period;
- Provision for a gross value, accumulated depreciation and current value of all assets at any point in time;
- Automatic calculation of the depreciation charge for the period;
- Separate recording of all entries made in the asset management system;
- Capability for tracing all the entries in the asset inventory, including any financial corrections made;
- Capability of generating lists of assets placed in a specific location in order to enable the physical inspection of the assets to be performed.

EGN-ESP-SOW-2.4-136: The Contractor ***shall*** implement appropriate recording of the EGNOS system spare parts, assuring in particular that:

- The major EGNOS spare parts which are expected to be used for longer than 1 /one/ year are recorded as separate assets, however identified as a spare part;
- The value of the spare part is written-off when the spare part is being deployed on the hosting site.

EGN-ESP-SOW-2.4-137: The Contractor ***shall*** look for approval from the Customer for decommissioned assets to be written-off in the inventory following a write-off procedure, including provision of the supporting documents and an opinion of a special committee established by the Contractor. The assets accepted for the write-off by the Customer must not be deleted from the inventory, but deactivated.

EGN-ESP-SOW-2.4-138: The Contractor ***shall*** introduce appropriate internal control procedures ensuring the reliability of data in the inventory, such as segregation of duties and validation.

EGN-ESP-SOW-2.4-139: The Contractor ***shall*** perform physical inspections of the assets on a regular basis and send them to the Customer for validation.

EGN-ESP-SOW-2.4-140: The Contractor ***shall*** grant the Customer a remote access to the asset management system, in order to extract the reports available for the accounting and control purposes.

Assets management

EGN-ESP-SOW-2.4-141: The Contractor ***shall*** write a "Hardware Asset Utilisation Plan" explaining how EU EGNOS assets are managed. A template of such plan is provided in [RD-22].

Input:

(1) Template of Asset Utilisation Plan [RD-22]

Deliverable:

(1) Hardware Asset Utilisation Plan [DEL-37]

2.5 GEO TRANSPONDERS

GEO Roadmap

Preamble: The "GEO Roadmap" is under the responsibility of the public sector.

EGN-ESP-SOW-2.5-142: The Contractor ***shall*** ensure that the GEO procurement and use are consistent with the EGNOS GEO Roadmap.

Input:

(1) Technical Note on EGNOS GEO satellites Roadmap [RD-23]

EGN-ESP-SOW-2.5-143: The Contractor ***shall*** provide support to the elaboration of the "GEO Roadmap", and in particular:

• Address the timeline of EGNOS OP and EGNOS TEST needs, the corresponding configuration of NLES, and contingency configurations;

• Maintain an up-to-date status of predicted lifetime of the GEO transponders (every 6 /six/ months FMECA / RAMS) together with the future plans of the GEO operators to potentially relocate their satellite (5 /five/ years minimum in advance).

3 WORK PACKAGE 3 – INFRASTRUCTURE EVOLUTION AND DEPLOYMENT

3.1 EVOLUTIONS OF IN-SERVICE SYSTEM (V2)

Service Provider Requirements Document

EGN-ESP-SOW-3.1-144: Based on the experience gathered in operating the EGNOS system and providing the EGNOS services, the Contractor ***shall*** produce and maintain a list of service provision-related requirements for system changes proposed for implementation in the next ESR.

EGN-ESP-SOW-3.1-145: In this list of service provision-related requirements, the Contractor ***shall*** include as a minimum:

• Detailed description of the issue or deviation faced by the Contractor (e.g. conditions of occurrence, level of criticality with respect to safety and service provision efficiency, impact on the provision of services);

• Identification of the change proposed in order to solve the issue/deviation;

• For each requirement, the justification of the need and the analysis of its potential benefits/impact for the services;

• Classification of the criticality of the requirement using the same rules and prioritisation of the proposed changes as per the events gravity definition.

EGN-ESP-SOW-3.1-146: The Contractor ***shall*** include the list of specific service provision-related requirements proposed for implementation in the next ESR in the Service Provider Requirements Document (SPRD) produced by the Contractor.

Deliverable:

(1) Service Provider Requirement Document [DEL-38]

EGN-ESP-SOW-3.1-147: The Contractor may propose any type of changes in their SPRD but ***shall*** focus primarily on requirements that would increase the efficiency of the EGNOS system operability and maintainability in terms of safety margins, security, operations cost and service improvements.

EGN-ESP-SOW-3.1-148: The SPRD ***shall*** be approved by the Customer, in preparation to a new EGNOS System Release.

REX process

Preamble: In support of the EGNOS SoL service, a Return of EXperience (REX) process has been defined with the system developers. This process relies on 'in-service' monitoring and the exploitation of hardware and software field observations collected by the Contractor.

The main objectives of the REX process are to:

• Evaluate in-service data against the reliability models used during the system development (the qualification baseline);

• Provide analysis / recommendations on hardware and software behaviour that will be exploited in the system engineering;

• Provide analysis / recommendations on maintainability and operability by the Contractor.

EGN-ESP-SOW-3.1-149: The Contractor ***shall*** maintain and improve the REX process established with the Industry Prime.

EGNOS System Change Management

EGN-ESP-SOW-3.1-150: The Contractor's participation in the Change Management Process ***shall*** encompass all the steps and tasks assigned to the Contractor as described in [AD-2].

Input:

(1) Change Management Process (CMP) [AD-2]

Procurement[1] of Major System Releases (PEA system V2)

EGN-ESP-SOW-3.1-151: The Contractor ***shall*** participate to the procurement steps of all EGNOS major system releases (EGNOS V2) delegated by the Customer to the European Space Agency (ESA) and in accordance with the definition and principles defined in the [AD-2]. These Product Evolution Activity (PEA) steps encompass the following duties:

- Participation to the definition of the needs and specifications through the Nav-Chain Task Force if any and the System and Service CCB;
- Review of the Change Implementation Proposal (CIP) drafted by ESA;
- Participation to the procurement and negotiation process between ESA and Industry (e.g. Negotiation meetings, Tender Evaluation Boards, Tender Steering Committees);
- Being the technical interface of some industrial work packages subcontracted by ESA to industry;
- Verification all along the procurement steps of the compliance to the requirements, and in particular to the SPRD;
- Review of the Safety Justification Files and preparation of Design Safety Cases;

[1] Please refer to the "Definitions" section in Appendix 3 of this document for meaning of this term.

- Preparation all along the procurement phase and anticipation of the Hand-over of the qualified release by reviewing the Library of EGNOS Operations (LEO).

Procurement[2] of Minor System Releases (Maintenance of Service impacting V2)

EGN-ESP-SOW-3.1-152: For the maintenance of the service performances that implies a modification or evolution of the system, the Contractor ***shall*** endorse the procurement steps of all EGNOS minor system releases (EGNOS V2) based on Observation Reports and in accordance with the principles defined in the [AD-2]. When decided by the Customer (taking into account recommendation from the European Space Agency) as being a minor change, these steps encompass the following duties:

- Participation to the definition of the needs and specifications through the Nav-Chain Task Force if any and the System and Service CCB;
- Preparation of the Change Implementation Proposal (CIP), submitted to Customer approval;
- Lead of procurement, negotiation and contract award processes with Industry with the support from ESA for the maintenance of the System Specifications;
- Chairing the procurement reviews and release development and qualification milestones with the support of ESA, as well as proposing updates to the system requirements associated to the minor release;
- Direct deployment of the release after the qualification;
- Preparation of the Safety Files / Design Safety Cases;
- Update of the declaration of performances and industrial commitment;
- Verification of the compliance to the requirements, and in particular to the SPRD;
- Notification / alerting the Customer on any escalation topics or risks when relevant.

Preparation of Preliminary Change Implementation Proposal (PCIP) for Minor Release

EGN-ESP-SOW-3.1-153: The Contractor ***shall*** produce a Preliminary Change Implementation Proposal (PCIP) describing the content of the minor release and specifying the following main items:

[2] Idem

• The technical features to be included in the next ESR (including prioritisation of the features, analysis of their technical feasibility and maturity and their impact on service provision);

• The implementation plan;

• The initial schedule;

• Budgetary estimates;

• The procurement procedure (Open call or Direct negotiations) and the type of contract (FFP or Time & Material).

Deliverable:

(1) Preliminary Change Implementation Proposal [DEL-39]

Approval of Change Implementation Proposal (CIP) for Minor Release

EGN-ESP-SOW-3.1-154: In order to proceed with the implementation of a Minor Release, the Contractor ***shall*** submit to Customer approval a Change Implementation Proposal (CIP) describing the content of the minor release and specifying at least the following main items:

• List of proposed exceptions and non-compliance to the applicable contract (including this Statement of Work and its applicable documents);

• The Minor Release implementation schedule;

• The Minor Release industrial organisation and subcontracting structure;

• The Minor Release implementation Firm Fixed Price and the associated subcontracting price breakdown.

Deliverable:

(1) Change Implementation Proposal [DEL-40]

Major and Minor ESR technical implementation

EGN-ESP-SOW-3.1-155: As part of the ESR preliminary design activities, the Contractor ***shall*** provide an impact assessment of the proposed ESR design with regards to system operability and operations baseline, system maintenance, operations costs, safety and security.

Deliverable:

(1) Impact Assessment [DEL-41]

Minor Release technical procurement

EGN-ESP-SOW-3.1-156: The Contractor ***shall*** ensure that the procurement of minor releases assigned by the Customer covers, from a contractual point of view, the negotiations and the management of the contract, and from a technical

point of view, the follow-up of the development, AIV integration, qualification, PA/QA/Safety, security, and expected industrial commitment and service performance.

Minor Release Review Process

EGN-ESP-SOW-3.1-157: The Contractor ***shall*** ensure that the Design Review process foresee the delivery of documents at least 10 /ten/ working days in advance of the review, and that the process allows a good preparation and anticipation of the comments for the reviewers.

Minor Release contracts duration and guarantee

EGN-ESP-SOW-3.1-158: The Contractor ***shall*** ensure that the contracts for the qualification of the minor releases foresee a guarantee period post Qualification Review, in order to allow industrial assistance during the hand-over and deployment process.

3.2 MAJOR EVOLUTIONS (V3)

Major Evolutions (V3) Interface with ESA

EGN-ESP-SOW-3.2-159: The Contractor ***shall*** conclude an agreement with the European Space Agency (ESA) ruling the working interfaces for the development of the Version 3 of EGNOS system during the Preliminary Design Phases.

Major Evolutions (V3) Development phase (C/D)

EGN-ESP-SOW-3.2-160: The Contractor ***shall*** follow the development of the Version 3 of EGNOS system during the Critical Design and Verification Phases C/D with the same requirements as the ones of the above section for the Major Releases V2 (Evolution of the In-Service System V2).

Reporting on progress of Version 3

EGN-ESP-SOW-3.2-161: The interface with ESA ***shall*** ensure that the Contractor participates to design, management and progress reviews related to Version 3, and will trigger a regular reporting on the views of the Contractor on the progress of Version 3.

V2 to V3 system migration plan

EGN-ESP-SOW-3.2-162: The Contractor ***shall*** review regularly and provide critical comments to the system migration plan from Version 2 to Version 3.

Synergies Version 2 and Version 3

EGN-ESP-SOW-3.2-163: In case of possible synergies defined by ESA and the Customer between the upgrade of the System Version 2 (due to obsolescence) and the design of Version 3, the Contractor ***shall*** support the preparation of their

future development and implementation via the Service and System CCB in the frame of PEA activities.

V2 to V3 Operations migration proposal

EGN-ESP-SOW-3.2-164: The Contractor ***shall*** prepare an operational concept on the Version 3 during the development phase of the Version 3 (Phase C).

3.3 Release Deployment

Release Deployment

EGN-ESP-SOW-3.3-165: The Contractor ***shall*** perform the deployment of the EGNOS System Releases for the entire duration of the contract.

EGN-ESP-SOW-3.3-166: When performing the deployment of a new ESR into the operational configuration, the Contractor ***shall*** ensure a continuous provision of EGNOS SIS and Services.

Update of operational plans, processes and procedures

EGN-ESP-SOW-3.3-167: The Contractor ***shall*** update their operational plans, processes and procedures in accordance with the specific features of the new ESR, and notify the Customer when completed.

EGN-ESP-SOW-3.3-168: For this purpose, the Contractor ***shall*** use the technical documentation and qualification evidence from the Industry Prime, in particular the "Library of EGNOS Operations" which is a technical description of the new ESR, describing the operating conditions and limits under which the ESR may be operated safely.

EGN-ESP-SOW-3.3-169: The Contractor shall implement the export control procedures for the logistics of all export controlled items under ITAR of the EGNOS infrastructure, and in particular maintain the end user statements.

3.4 Obsolescence

Obsolescence survey report

EGN-ESP-SOW-3.4-170: The Contractor ***shall*** produce every year an Obsolescence Survey Report with a 10 /ten/ year sliding window, in order to characterise the expected end of life of all elements of the system and the support facilities.

Deliverable:

(1) Obsolescence Survey Report [DEL-42]

EGN-ESP-SOW-3.4-171: In the "Obsolescence Survey Report", the Contractor ***shall*** provide justifications for obsolescence dates of the elements of the system, including software / firmware and hardware analysis of units.

Hardware obsolescence analysis

EGN-ESP-SOW-3.4-172: The Contractor ***shall*** provide a hardware obsolescence analysis in order to assess the level of obsolescence risk considering whether the EGNOS system hardware element is at the end of its production cycle (but spares can still be procured), or at the end of availability of spares from the supplier.

EGN-ESP-SOW-3.4-173: The Contractor ***shall*** propose to the Customer, for each obsolete hardware part, the best option between:

- Buying a stock of hardware spares before end of availability, or
- Initiating an upgrade to replace the hardware part.

Software obsolescence analysis

EGN-ESP-SOW-3.4-174: The Contractor ***shall*** provide a software obsolescence analysis in order to assess the level of obsolescence risk on software production chain components, operating systems and associated libraries, and software verification tools including the supplier cost for supporting obsolete software.

Obsolescence watch

EGN-ESP-SOW-3.4-175: The Contractor ***shall*** implement an obsolescence technology watch for all elements and subsystems used in the EGNOS system (hardware, software, network services, GEO transponders, etc.) and use this activity to feed their "Obsolescence Management Plan".

Obsolescence Management Plan

EGN-ESP-SOW-3.4-176: In accordance with the **"**Obsolescence Survey Report" and considering the spares procurement strategy, the Contractor ***shall*** produce and maintain an "Obsolescence Management Plan" providing an implementation plan covering a 5 /five/ year period, including a cost and schedule assessment, and identifying proposed measures for the maintainability or replacement of obsolete units.

Deliverable:

(1) Obsolescence Management Plan [DEL-43]

3.5 TOOLS

Equipment and tools for maintenance

EGN-ESP-SOW-3.5-177: The Contractor ***shall*** ensure that all equipment and tools necessary for maintenance (e.g. EGNOS TEST, AIV platform) are available for the purpose of verification of maintenance actions. The Contractor may propose the use of additional tools aiming at improving the efficiency of the EGNOS Product maintenance subject to approval by the Customer.

Access to SPEED platform

Preamble: Through the evolution project, ESA have developed a test platform, called SPEED (Support Platform for EGNOS Evolution and Demonstration), that is used to support the qualification of the new system releases. The Contractor may foresee using this platform for their own needs, under a scheme to be agreed with ESA.

EGN-ESP-SOW-3.5-178: The Contractor ***shall*** define a plan to access to the SPEED platform and perform independent performance analysis or validate operational concepts.

Deliverable:

(1) SPEED Access Plan [DEL-44]

Participation to SPEED platform upgrades

EGN-ESP-SOW-3.5-179: The Contractor ***shall*** participate in the specifications driving the future development of the SPEED platform.

TERESA tool

Preamble: The current EGNOS Service Provider use a tool called TERESA (TEsting Receiver for EGNOS using Software Algorithms) to report on the EGNOS performances against the SDD. It is the duty of the Contractor to ensure the proper evolution of the tool to match the evolution of the EGNOS system.

EGN-ESP-SOW-3.5-180: The Contractor ***shall*** develop and maintain in configuration a roadmap for enhancement of the TERESA tool in a 5 /five/ years sliding window (minimum).

Deliverable:

(1) TERESA Tool Plan [DEL-45]

EGN-ESP-SOW-3.5-181: The Contractor ***shall*** procure the future upgrades of the TERESA tool.

NOTAM tool

EGN-ESP-SOW-3.5-182: The Contractor ***shall*** develop and maintain in configuration a roadmap for enhancement of the NOTAM tool in a 5 /five/ years sliding window (minimum).

Deliverable:

(1) NOTAM Tool Roadmap

Tools plan

EGN-ESP-SOW-3.5-183: The Contractor ***shall*** draft and maintain a "Tools Plan" that will define the needs and the status for all tools needed for the Service

Provision Phase (incl. KPI generation), their configuration, and their maintenance.

Deliverable:

(1) Tools Plan [DEL-46]

Tools upgrade

EGN-ESP-SOW-3.5-184: The Contractor ***shall*** procure the upgrades of all the tools needed for the Service Provision Phase upon Customer approval.

4 WORK PACKAGE 4 – MANAGEMENT

4.1 PLANNING COST RISKS REPORTING

Management interfaces

EGN-ESP-SOW-4.1-185: The Contractor ***shall*** provide the adequate project management layer responsible for the management of all aspects of the service provision contract and in particular the management of interfaces:

• Within the Contractor's management organisation;

• Between the Contractor and all subcontractors;

• Between the Contractor and the Customer, in particular for what concerns reporting lines and frequency;

• Between the Contractor and ESA;

• Between the Contractor and EASA (or other relevant certification/ standardisation authorities), for what concerns certification.

Scope of the interface with the Customer

EGN-ESP-SOW-4.1-186: The Contractor ***shall*** be adequately structured to provide interfaces with the Customer for what concerns the management of this service provision contract, according to the requirements defined in this SOW.

Project Management Plan

EGN-ESP-SOW-4.1-187: The Contractor ***shall*** finalise their "Project Management Plan" by KO.

Deliverable:

(1) Project Management Plan [DEL-47]

Management procedure

EGN-ESP-SOW-4.1-188: The Contractor ***shall*** use all reasonable endeavours to procure attendance at all relevant meetings by personnel of suitable seniority

and experience to contribute effectively to the topics for discussion at the meeting.

Reporting

EGN-ESP-SOW-4.1-189: The Contractor ***shall*** provide a monthly "Service Provision Management Report" (SPMR) with the objective of presenting an overview of the service performance, risks, schedule, and presenting the status of each WP described in this SOW.

Deliverable:

(1) Service Provision Management Report [DEL-11]

EGN-ESP-SOW-4.1-190: The Contractor ***shall*** provide in the SPMR updated metrics including:

• The achieved value for all Key Performance Indicators as per requirement *EGN-ESP-SOW-1.3-030*;

• Project milestone tracking;

• Number of waivers and deviations from the agreed requirements baseline;

• Number of Operational Non Conformance Reports open at the time of reporting and closed during the reporting period.

EGN-ESP-SOW-4.1-191: The Contractor ***shall*** inform the Customer on a quarterly basis on the progress of the services from the Contractor, by way of reporting on technical progress, resources actuals, earned value and cost at completion, planning forecasts, any event that could influence the objectives or delays or budgets.

Deliverable:

(1) Project Schedule [DEL-48]

Schedule per Work Package

EGN-ESP-SOW-4.1-192: For all Work Packages, the Contractor ***shall*** provide on a quarterly basis a Project Schedule detailing:

• The operation schedule and assets rotation (when applicable);

• Planned updates to the EGNOS Product supported by the PSS services;

• Planned deployment of updated EGNOS product. In particular, for new releases, the related deployment (preparatory and execution) milestones clearly indicated, as well as planning of the operational transition phases;

• A tabulated list with planned dates of all major milestones compared with actual dates;

• More detailed schedules (such as PERT charts, etc.) should be presented as required.

Deliverable:

(1) Project Schedule [DEL-48]

Schedule report

EGN-ESP-SOW-4.1-193: The Contractor ***shall*** provide, as part of the SPMR, a Gantt chart detailing the milestones for all WPs on a monthly basis.

Deliverable:

(1) Service Provision Management Report [DEL-11]

Project Management Plan applicability

EGN-ESP-SOW-4.1-194: The Contractor ***shall*** execute the contract in compliance with the "Project Management Plan".

Risk management

EGN-ESP-SOW-4.1-195: The Contractor ***shall*** finalise the "Risk Management Plan" for approval at KO.

Deliverable:

(1) Risk Management Plan [DEL-49]

EGN-ESP-SOW-4.1-196: For all Work Packages, the Contractor ***shall*** ensure an appropriate risk reduction activity through risk management.

EGN-ESP-SOW-4.1-197: The Contractor ***shall*** identify all risks linked to EGNOS operation, product support and service provision, evaluate the risk realisation impact on the EGNOS mission and SIS provision, and propose a risk reduction activity for every single risk identified.

EGN-ESP-SOW-4.1-198: The Contractor ***shall*** identify and quantify the risks, including an estimate of the plan to mitigate the impact of known risks and an estimate of the size of the other risks.

EGN-ESP-SOW-4.1-199: The Contractor ***shall*** continually manage risk by assessing risks, formulating mitigation and recovery plans and executing them.

EGN-ESP-SOW-4.1-200: The Contractor ***shall*** hence maintain a "Risk Register" covering the detailed and up-to-date description of the risks of all activities subject of this contract (including the subcontracted activities) and containing:

• Risk identification matrix (occurrence probability and impact severity on a 5 grades scale for each);

• Risk mitigation plan with costs and schedule;

• Risk mitigation actions tracking.

Deliverable:

(1) Risk Register [DEL-50]

EGN-ESP-SOW-4.1-201: The Contractor ***shall*** update the "Risk Register" every month and provide it to the Customer.

Deliverable:

(1) Risk Register [DEL-50]

EGN-ESP-SOW-4.1-202: The Contractor ***shall*** organise monthly risk management meeting(s) involving representatives at Customer's discretion.

EGN-ESP-SOW-4.1-203: The Contractor ***shall*** describe how the certified service provision of EGNOS will be maintained in case of financial difficulties affecting the other services (if any) provided by the Contractor.

Meetings plans and organisation

EGN-ESP-SOW-4.1-204: The current estimate of the meetings chaired by the Customer is that between 30 /thirty/ and 40 /fourty/ meetings will be required per year at the Customer's premises (such as MRD-CCB, S-CCB, SPMM, TEB, pre-TEB, reviews, and ad-hoc meetings). For these meetings the average Contractor's attendance ***shall*** be of 2 /two/ persons. Teleconferences or videoconferences may be used during such meetings for other Contractor's members, or may be substituted for a meeting if appropriate.

EGN-ESP-SOW-4.1-205: Unless otherwise stated, the Contractor ***shall*** be responsible for the organisation of the meetings as well as preparation and distribution of minutes for all meetings.

EGN-ESP-SOW-4.1-206: For meetings under Contractor's responsibility, the Contractor ***shall*** deliver to the Customer the Minutes of Meeting not later than 5 /five/ days after the meeting.

Reviews organisation

EGN-ESP-SOW-4.1-207: For reviews under Contractor's responsibility, the Contractor ***shall*** issue a specific review procedure before each review describing the review objectives, responsibilities, organisation, schedule and follow-up and identifying the required documentation input to the review.

EGN-ESP-SOW-4.1-208: The Contractor ***shall*** organise the system reviews in such a way that:

• The review procedures and invitations are sent to the Customer's representatives at least 1 /one/ month before the review date;

• Sufficient time is granted for access to the data package at the Customer's office for providing their review comments.

Actions management

EGN-ESP-SOW-4.1-209: The actions managed in the frame of the contract are the ones which answer to one, at least, of the following conditions:

• Actions whose execution conditions the progress of the the tasks, on both technical and schedule levels;

• Actions decided by an entity whose responsibility falls under the Project managers (e.g. progress meeting, System CCB).

The decision to engage an action falls under the responsibility of the chairman of the meeting where the action has been decided. In case of meeting Customer/Contractor, the action ***shall*** be the result of a consensus between the two parties.

EGN-ESP-SOW-4.1-210: At each progress management meeting, a status on the actions ***shall*** be provided by the Contractor.

Deliverable Documents

EGN-ESP-SOW-4.1-211: The Contractor ***shall*** deliver all documentation specified in the list of document deliverables [Appendix 2].

EGN-ESP-SOW-4.1-212: All deliverable documents ***shall*** be delivered in Microsoft Word and Adobe PDF formats.

EGN-ESP-SOW-4.1-213: Reviews of documents ***shall*** be planned by the Contractor and agreed with the Customer.

EGN-ESP-SOW-4.1-214: The Contractor ***shall*** make available to the Customer each of the delivered documents no less than 15 /fifteen/ working days in advance (unless stated otherwise in the "KPI Definition Document") to allow the Customer to review the delivered document and to provide comments, as appropriate. The review procedure for document deliverables is specified in the contract.

Cost to Completion

EGN-ESP-SOW-4.1-215: The Contractor ***shall*** provide at least every year an up-to-date Cost to Completion Note defining the state of the financial budget and the projection up to end of the contract.

Deliverable:

(1) Cost to Completion Note [DEL-51]

Cost reporting

EGN-ESP-SOW-4.1-216: The Contractor ***shall*** maintain cost reporting of the past budget commitments, with a particular emphasis on the main cost drivers (maintenance levels, cost per new release evolution and detailed per system functions upgrade) and, when issued by subcontractors, aligned with the Customer's Statement of Work (and WBS) of the procured activities.

Resident staff at Contractor premises

EGN-ESP-SOW-4.1-217: The Contractor ***shall*** provide 1 /one/ office at Contractor's premises to allow for Customer's resident or partially resident staff.

4.2 CONTRACTS AND PROCUREMENT

Visibility over the Geostationary Transponder Lease Service Level Agreement

EGN-ESP-SOW-4.2-218: The Contractor ***shall*** provide at SPRR the Service Level Agreement(s) they have negotiated with the GEO service provider(s).

Deliverable:

(1) GEO SLA [DEL-52]

Management of Geostationary Transponder Lease Service Contracts

EGN-ESP-SOW-4.2-219: The Contractor ***shall*** ensure the correct execution of on-going transponder lease contracts and their possible extension in order to ensure that the EGNOS mission requirements are maintained, reporting to the Customer in particular any failure in satellite operator contract execution.

Procurement of GEO transponders in service

EGN-ESP-SOW-4.2-220: The Contractor ***shall*** procure the services of all GEO transponders in service.

Visibility over the TWAN Service Level Agreement

EGN-ESP-SOW-4.2-221: The Contractor ***shall*** submit at SPRR the Service Level Agreement they have negotiated with the Transport Wide Area Network (TWAN) Service Provider, including the KPIs associated to this SLA.

Note: it is understood that the provision of TWAN communication services could be leased from a third party.

Deliverable:

(1) TWAN SLA [DEL-53]

Technical subcontracts management

EGN-ESP-SOW-4.2-222: The Contractor ***shall*** establish effective technical subcontract management procedures and put in place engineering metrics.

Incumbent subcontracts management

EGN-ESP-SOW-4.2-223: In order to ensure a safe and uninterrupted service provision transition, the Contractor ***shall*** establish the necessary transition agreements through contractual relationships with all the incumbent subcontractors listed in [AD-10].

Input:

(1) List of Incumbent and Mandatory Subcontractors [AD-10]

Mandatory subcontracts management

EGN-ESP-SOW-4.2-224: The Contractor ***shall*** maintain contractual relationships with all the mandatory subcontractors listed in [AD-10] for the entire duration of this contract.

Input:

(1) List of Incumbent and Mandatory Subcontractors [AD-10]

Procurement CCN justification

EGN-ESP-SOW-4.2-225: The Contractor ***shall*** produce internal procurement notes together with the Contract Changes Notices (CCNs) for any changes of subcontracts that would explain the justification of the procurement procedure and the proof of negotiations, in view of potential audits.

4.3 SECURITY

Classified material rules

EGN-ESP-SOW-4.3-226: The Contractor ***shall*** handle all classified information and material which they either produce during the performance of the contract (foreground information) or to which they have access to as an input to their work under the contract (background information) in compliance with the rules and procedures outlined in the European GNSS Program Security Instruction (PSI) [AD-11] and following the provisions of the Security Aspects Letter (SAL) [AD-12].

Inputs:

(1) European GNSS PSI [AD-11]

(2) Security Aspects Letter [AD-12]

EGN-ESP-SOW-4.3-227: The Contractor ***shall*** comply with the provisions on security defined in Decision 2001/844/EC [RD-39] and amendment 2006/548/EC [RD-40].

EGN-ESP-SOW-4.3-228: The Security Management System ***shall*** take into account the specific rules provided in [AD-11] related to the protection of classified information.

Input:

(1) European GNSS PSI [AD-11]

EGN-ESP-SOW-4.3-229: The Contractor ***shall*** take in duly account the security requirements provided in [RD-39], [RD-40] and in the document [AD-13] (compliance matrix to be produced, with justification of deviations), refining, if needed, the provided security policy [AD-14], and defining the relevant security policy manuals and procedures related to the operations of the system.

Inputs:

(1) EGNOS Security Requirements [AD-13]

(2) EGNOS Security Policy [AD-14]

Security Risk Treatment Plan

EGN-ESP-SOW-4.3-230: The Contractor ***shall*** perform a security vulnerability and risk analysis taking due account of the high level security specifications defined in [RD-68], and on this basis, ***shall*** define, maintain in configuration and release every 6 /six/ months a "Security Risk Treatment Plan" containing the management of security risks in terms of risk identification, characterisation, impact on all aspects of service provision (including operations and maintenance) and detailing the implementation of mitigations, including details on approval of financing.

Deliverable:

(1) Security Risk Treatment Plan [DEL-54]

Deviations from security baseline

EGN-ESP-SOW-4.3-231: The Contractor ***shall*** clearly identify the security requirements that cannot be met especially due to the current system design, specific third-party service level agreements and asset management, and manage the related risks defined in the "Security Risk Treatment Plan".

4.4 RESOURCES AND COMPETENCES

Staffing

EGN-ESP-SOW-4.4-232: The Contractor ***shall*** ensure that they are staffed to the level appropriate to the provision of a safe and continuous Signal-In-Space and associated services.

Staffing Plan

EGN-ESP-SOW-4.4-233: At SPRR, the Contractor ***shall*** provide to the Customer their final "Staffing Plan".

Deliverable:

(1) Staffing Plan [DEL-55]

Management structure

EGN-ESP-SOW-4.4-234: The Contractor ***shall*** provide a management structure adequate to the objectives and mission of the EGNOS program.

Management roles

EGN-ESP-SOW-4.4-235: As a minimum, the Contractor's management structure for EGNOS Service Provision ***shall*** clearly include the following managerial roles (key personnel):

- Service Provision Overall Manager;
- Operations Manager;
- Product Support Manager;
- Quality Manager;
- Safety Manager;
- Security Manager;
- Certification Manager;
- HR Manager;
- External Services Manager;
- PEA Manager;
- Design Manager;
- Procurement Manager.

Changes to key personnel

EGN-ESP-SOW-4.4-236: Should any key personnel be subject to change, the Contractor ***shall*** notify and request approval from the Customer.

Exploitation resources reporting

EGN-ESP-SOW-4.4-237: The Contractor ***shall*** maintain a register of available core and non-core resources (within Contractor's organisation and for subcontractors) and develop an "EGNOS Service Provider Resource Report" to be updated on a 6 /six/ month basis, in order to alert the Customer on the adequation with the exploitation needs and propose mitigation actions.

Deliverable:

(1) EGNOS Service Provider Resource Report [DEL-56]

Training

EGN-ESP-SOW-4.4-238: The Contractor ***shall*** ensure that not only assets linked to the EGNOS system allow the provision of a continuous SIS, but also that staff and human resources allocated to processes enabling the provision of EGNOS SIS are trained and in sufficient number to match the EGNOS expected performances (as per SDD and KPI Definition Document).

Inputs:

(1) OS SDD [RD-3]

(2) SoL SDD [RD-4]

(3) EDAS SDD [RD-5]

(4) KPI Definition Document [AD-1]

EGN-ESP-SOW-4.4-239: The Contractor ***shall*** provide, in accordance to their qualified processes and procedures related to training, a "Training Pack" containing the following:

• A training plan;

• Training requirements for each position/profile;

• Training records for staff;

• Training evaluation results;

• Details on the level of implementation of the training plans for the different operations teams.

Deliverable:

(1) Training Pack [DEL-57]

Management reporting lines

EGN-ESP-SOW-4.4-240: In order to ensure a clear interface between the Customer and the Contractor, the Contractor ***shall*** appoint a unique point of contact on the Contractor side for all matters related to the activities specified in this SOW.

EGN-ESP-SOW-4.4-241: The Customer ***shall*** be granted access to all Contractor department/section managers involved in the EGNOS project within the scope of this SOW. This requirement also applies to subcontractors to the Contractor.

Contractor internal management reporting

EGN-ESP-SOW-4.4-242: The Contractor ***shall*** detail their internal management reporting lines and techniques.

EGN-ESP-SOW-4.4-243: On request from the Customer, the Contractor ***shall*** grant the Customer access to all reporting documents created by the Contractor within the course of this contract.

4.5 DOCUMENTATION AND CONFIGURATION

Document Management System

EGN-ESP-SOW-4.5-244: The Contractor ***shall*** implement and maintain in configuration a Document Management System for the EGNOS documentation.

Customer access to documentation

EGN-ESP-SOW-4.5-245: The Contractor ***shall*** establish electronic access for the Customer or their representative(s) to the EGNOS documentation database.

EGN-ESP-SOW-4.5-246: Upon request by the Customer, the Contractor ***shall*** provide electronically all documentation under configuration control within 10 /ten/ working days following the request.

Configuration Management Programme

EGN-ESP-SOW-4.5-247: The Contractor ***shall*** implement a Configuration Management Programme, which makes provision for the following:

• Proposed changes to the EGNOS system operational processes and procedures / subcontract through the use of Engineering Change Notices and Engineering Change Proposals;

• Class 1 Non Conformance Reports issued when the design or the operations implements a major deviation from the baseline;

• Materials Review Boards to review any proposed changes to the baseline or design;

• Conduct of Functional Configuration Audit(s);

• Conduct of Physical Configuration Audit(s).

All the above are subject to the approval of the Customer.

EGN-ESP-SOW-4.5-248: The Contractor ***shall*** finalise the "Configuration Management Plan" by SPRR.

Deliverable:

(1) Configuration Management Plan [DEL-58]

EGN-ESP-SOW-4.5-249: All the configuration of the system including the operational material and procedures ***shall*** be configured under the responsibility of the Contractor.

Configuration control tools

EGN-ESP-SOW-4.5-250: The Contractor ***shall*** ensure that all processes pertaining to the delivery of their services are duly documented and controlled by the adequate configuration control tools.

Configuration status

EGN-ESP-SOW-4.5-251: The Contractor ***shall*** manage the configuration of the deployed and operated system (hardware and software), the associated operational processes and procedures, the planning and reporting documentation, the Customer requirements and their traceability to system and operational features and ensure their compatibility.

EGN-ESP-SOW-4.5-252: The configuration status ***shall*** be maintained in line with the service baseline and reported to the Customer in a "Configuration Status Report" (which is to include the configuration status delivered by industry and the associated compliance statement from the Contractor) to be delivered after any upgrade and re-submitted after any change or deviation.

Deliverable:

(1) Configuration Status Report [DEL-59]

4.6 SAFETY ASSURANCE

Technical competence evidence

EGN-ESP-SOW-4.6-253: The Contractor ***shall*** provide evidence of their technical and operational readiness through the delivery for the "EGNOS Safety Case". This document will merge the contents of the existing "Part A" developed by the EC [RD-47] and "Part B" developed by the current ESP [RD-48].

Deliverable:

(1) EGNOS Safety Case [DEL-60]

Safety Case Update

EGN-ESP-SOW-4.6-254: The "EGNOS Safety Case" ***shall*** be updated for each change impacting the safety of the EGNOS service and requiring a notification of change to the certification authority as further defined in the CMP [AD-2].

Deliverable:

(1) EGNOS Safety Case [DEL-60]

Safety Case content

EGN-ESP-SOW-4.6-255: The "EGNOS Safety Case" ***shall*** present the safety evidence and arguments ensuring that the system is designed, developed, operated and maintained to ensure compliance to the user safety requirements in terms of Integrity and Continuity-of-Service contained in the ICAO Annex 10 to the Convention on International Civil Aviation [RD-41].

Safety reporting mechanism

EGN-ESP-SOW-4.6-256: The Safety Case ***shall*** provide the justification that other reporting mechanisms such as those related to the monitoring of the system performance (KPIs) do not impact EGNOS safety reporting mechanisms.

SoL safety evidence

EGN-ESP-SOW-4.6-257: The Contractor ***shall*** trace independendly and maintain in configuration the safety evidence of each EGNOS Safety of Life service (En-route, NPA, APV, and others).

Certification dossier - annual reporting

EGN-ESP-SOW-4.6-258: Annual reporting of operational performance and significant activities and developments ***shall*** be documented within the certification dossier in accordance to the General ANSP requirements within the SES regulations.

Safety Argumentation documentation database

EGN-ESP-SOW-4.6-259: The Contractor ***shall*** maintain a database of documentation required to support the safety argument contained in the Safety Case.

Note: This activity will build upon the already existing certification database covering the EGNOS design safety case reference documents that is using the M-Files tool (refer to http://www.m-files.com/).

Safety Critical Non-Conformances

EGN-ESP-SOW-4.6-260: The Contractor ***shall*** notify the Customer of any non conformances having a potential safety impact, following the KPI regime described in [AD-1].

Safety Incident Reporting

EGN-ESP-SOW-4.6-261: The close-out of the safety-relevant non conformances ***shall*** be endorsed by the Customer.

Support of the REX process

EGN-ESP-SOW-4.6-262: The Contractor ***shall*** provide evidence in support of the REX process.

APPENDIX 1: LIST OF APPLICABLE AND REFERENCE DOCUMENTS

Applicable Documents

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
AD-1	KPI Definition Document	GSA	GSA-EGN-KPI-001	v 1.0	05/06/2012	X				
AD-2	Change Management Process (CMP)						X			
AD-3	SPRR EGNOS Test Specifications							X		
AD-4	RIMS Implementation Process						X			
AD-5	EGNOS Mission Requirement Document (MRD)	EC	EC-EGN-MRD_2.1_rev3	2.1 rev. 3	08/02/2012	X				

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
AD-6	LEO Operations						X			
AD-7	LEO Maintenance						X			
AD-8	Site IAR						X			
AD-9	PSS Catalogue	TAS	200411776L	Issue 2, Rev. C	08/12/2009	X				
AD-10	List of Incumbent and Mandatory Subcontractors	GSA	GSA-EGN-SUB-001	v 1.0	05/06/2012	X				
AD-11	European GNSS PSI	GNSS Security Board		3.0	06/03/2012	X				
AD-12	Security Aspects Letter	GSA					X			
AD-13	EGNOS Security Requirements						X			This document is classified RESTRICTED.

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
AD-14	EGNOS Security Policy						X			
AD-15	EGNOS Handback Plan						X			
AD-16	Platform Handover Plan	ESSP	ESSP-MAN-214				X			

Reference Documents

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
RD-1	EWA Template						X			The template may be altered subject to receiving prior Customer/EU consent.
RD-2	List of EGNOS Working Agreements						X			Updates will be provided during the subsequent stages of the procurement procedure, if applicable.
RD-3	OS SDD	EC	EGN-SDD OS	v 1.1	30/10/2009	X				Available at: http://egnos-portal.gsa.europa.eu
RD-4	SoL SDD	EC	EGN-SDD SoL	v 1.0	02/2011	X				Available at: http://egnos-portal.gsa.europa.eu
RD-5	EDAS SDD						X			
RD-6	Service Provision Management Report Template						X			

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
RD-7	ONCR Classification						X			
RD-8	ESSP Public Performance Report	ESSP				X				Available at: http://www.essp-sas.eu/monthly_performance_reports
RD-9	User Consultation-Helpdesk Report Template						X			
RD-10	EDAS Technical Package						X			
RD-11	Users Satisfaction Survey	GSA					X			
RD-12	EGNOS Multimodal Adoption Plan	GSA							X	
RD-13	GSC Operational Concept									Will be provided after contract award.
RD-14	PRO28	ESSP	ESSP-PRO-28				X			

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
RD-15	ESSP Management Processes						X			
RD-16	ESSP Operations Baseline						X			
RD-17	EDAS Operating Manual						X			
RD-18	CSAR						X			
RD-19	Obsolescence Management Plan						X			
RD-20	REX Process						X			
RD-21	Current EGNOS Inventory						X			
RD-22	Template of Asset Utilisation Plan						X			
RD-23	Technical Note on EGNOS GEO satellites Roadmap	ESA	E-TN-SYST-E-0140-ESA	2.1	27/12/2011	X				

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
RD-24	Safety Reporting Scheme						X			
RD-25	Description of the Qualification baseline						X			
RD-26	EASA Milestone Plan	EASA						X		
RD-27	Overview of EGNOS Operations						X			
RD-28	Commission Regulation (EC) No 482/2008 of 30 May 2008 establishing a software safety assurance system to be implemented by air navigation service providers and amending Annex II to Regulation (EC) No 2096/2005	EC	Regulation (EC) No 482/2008		30/05/2008	X				Publicly available
RD-29	Regulation (EC) No 549/2004	EC	Regulation (EC)		10/03/2004	X				Publicly available

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
	of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky (the framework Regulation		No 549/2004							
RD-30	Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation)	EC	Regulation (EC) No 550/2004		10/03/2004	X				Publicly available
RD-31	Regulation (EC) No 551/2004 of the European Parliament and of the Council of 10 March 2004 on the organisation and use of the airspace in the single	EC	Regulation (EC) No 551/2004		10/03/2004	X				Publicly available

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
	European sky (the airspace Regulation)									
RD-32	Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management	EC	Regulation (EC) No 552/2004		10/03/2004	X				Publicly available
RD-33	Regulation (EC) No 1070/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulations (EC) No 549/2004, (EC) No 550/2004, (EC) No 551/2004 and (EC) No 552/2004 in order to improve the performance and sustainability of the European	EC	Regulation (EC) No 1070/2009		21/10/2009	X				Publicly available

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
	aviation system									
RD-34	Commission Regulation (EC) No 622/2003 of 4 April 2003 laying down measures for the implementation of the common basic standards on aviation security	EC	Commission Regulation (EC) No 622/2003		04/04/2003	X				Publicly available
RD-35	Commission Regulation (EC) No 915/2007 of 31 July 2007 amending Regulation (EC) No 622/2003 laying down measures for the implementation of the common basic standards on aviation security	EC	Commission Regulation (EC) No 915/2007		31/07/2007	X				Publicly available
RD-36	Commission Regulation (EC) No 2096/2005 of 20 December 2005 laying down	EC	Commission Regulation (EC)		20/12/2005	X				Publicly available

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
	common requirements for the provision of air navigation services		No 2096/2005							
RD-37	Commission Implementing Regulation (EU) No 1034/2011 of 17 October 2011 on safety oversight in air traffic management and air navigation services and amending Regulation (EU) No 691/2010	EC	Commission Implementing Regulation (EU) No 1034/2011		17/10/2011	X				Publicly available
RD-38	Commission Implementing Regulation (EU) No 1035/2011 of 17 October 2011 laying down common requirements for the provision of air navigation services and amending Regulations (EC) No 482/2008 and (EU) No	EC	Commission Implementing Regulation (EU) No 1035/2011		17/10/2011	X				Publicly available

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
	691/2010									
RD-39	Commission Decision 2001/844/EC of 29 November 2001 amending its internal Rules of Procedure	EC	Commission Decision 2001/844/EC		29/11/2001	X				Publicly available
RD-40	Commission Decision 2006/548/EC of 2 August 2006 amending Decision 2001/844/EC, ECSC, Euratom	EC	Commission Decision 2006/548/EC		02/08/2006	X				Publicly available
RD-41	Annex 10 to the Convention on International Civil Aviation	ICAO								To be procured directly by the Contractor via subscription fee.
RD-42	EGNOS System and Service CCB Terms Of Reference							X		
RD-43	GNSS Programme Control Board Terms Of Reference							X		

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
RD-44	System and Service Engineering Team Terms of Reference							X		
RD-45	MRD CCB Terms of Reference							X		
RD-46	EGNOS System Requirements Document						X			
RD-47	Safety Case Part A						X			
RD-48	Safety Case Part B						X			
RD-49	EGNOS Product Evolutions - EGNOS System Release developments life-cycle SoW						X			
RD-50	EGNOS Product Evolutions - PA and Safety Requirements						X			
RD-51	DO 229D Minimum Operational Performance	RTCA	MOPS DO- 229-				X			

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
	Standards (MOPS) for Global Positioning System/Wide Area Augmentation System Airborne Equipment		D							
RD-52	EGNOS Software Qualification Requirements							X		
RD-53	EGNOS Software and Hardware Engineering Requirements for EGNOS Product Evolutions							X		
RD-54	Interface for EGNOS Components Delivery to PACF						X			
RD-55	Applicability of ORD, VRD, IRD						X			
RD-56	ECSS-M Management Standards	ECSS	ECSS-M-ST			X				Available at: http://www.ecss.nl/,

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
										Standards tab
RD-57	ECSS Space Engineering Standards - System Engineering General Requirements	ECSS	ECSS-E-ST-10C	Issue 3	06/03/2009	X				Available at: http://www.ecss.nl/, Standards tab
RD-58	ECSS Space Engineering Standards - Verification	ECSS	ECSS-E- ST-10-02C	Issue 2	06/03/2009	X				Available at: http://www.ecss.nl/, Standards tab
RD-59	ECSS Space Engineering Standards - Software	ECSS	ECSS-E-ST-40C	Issue 3	06/03/2009	X				Available at: http://www.ecss.nl/, Standards tab
RD-60	ECSS Space Engineering Standards - Human Factors Engineering	ECSS	ECSS-E-ST-10-11C	Issue 1	31/07/2008	X				Available at: http://www.ecss.nl/, Standards tab
RD-61	Interface Specifications for GPS						X			

ID	Title	Author	Reference	Version	Date	Release				Comment
						Tender Phase I	TS-1	TS-2	SPRR	
RD-62	NOTAM URD						X			
RD-63	ATC Interface Control Document						X			
RD-64	ARTEMIS ICD						X			
RD-65	ASTRA ICD						X			
RD-66	System Definition Manual (SDM) for accessing INMARSAT-3 Navigation Transponders						X			
RD-67	System Definition Manual (SDM) for accessing INMARSAT-4 Navigation Transponders						X			
RD-68	EGNOS High Level Security Specifications	WGNET	EC document	1.0	15/09/2011		X			RESTREINT UE

APPENDIX 2: LIST OF DOCUMENT DELIVERABLES

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
DEL-1	Integration Report	As per SOW requirement				X	X								T	
DEL-2	SPRR Review Plan	As per SOW requirement		X											T	
DEL-3	ESP Operations Baseline	As per SOW requirement				X									T	
DEL-4	EGNOS Coverage Evolution Roadmap	As per SOW requirement				X (draft)	X (final)								A	
DEL-5	ESP Inputs to EGNOS Mission	As per SOW											X		I	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
	Evolution Roadmap	requirement														
DEL-6	EGNOS Service Implementation Roadmap	As per SOW requirement				X (draft)	X (final)								R	
DEL-7	OSS SDD	As per SOW requirement											X		A	
DEL-8	SoL SDD	As per SOW requirement											X		A	
DEL-9	EDAS SDD	As per SOW requirement											X		A	
DEL-10	KPI Monitoring	As per SOW	X			X									T	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
	Plan	requirement	(draft)													
DEL-11	Service Provision Management Report	As per SOW requirements						X							R	
DEL-12	Events Gravity Definition	As per SOW requirement				X									T	
DEL-13	Communication Template	As per SOW requirement					X								T	
DEL-14	EGNOS Monthly Performance Report	As per SOW requirements						X							R	
DEL-15	EDAS SLA	As per SOW				X (final)									T	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
		requirement														
DEL-16	Helpdesk Report	As per SOW requirement								X					R	
DEL-17	User Support Improvement Process	As per SOW requirement				X (final)									T	
DEL-18	User Satisfaction Action Report	As per SOW requirement							X						R	
DEL-19	Report on Actions Implementation for EGNOS Multimodal Adoption	As per SOW requirement									X				R	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
DEL-20	NOTAM Tool Evolution Roadmap	As per SOW requirement	X (draft)				X (final)			X					T, R	
DEL-21	NOTAM Evolution Data Package	As per SOW requirement											X		R	
DEL-22	Implementation Proposal for EGNOS-GNSS Service Centre Operations Interface													X	R	To be provided by the Contractor after contract award
DEL-23	Implementation Proposal for Joint EGNOS-GNSS Service Centre													X	R	To be provided by the Contractor after

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
	Operations															contract award
DEL-24	Quality and Safety Audit Plan	As per SOW requirement	X (draft)			X (final)									R	
DEL-25	Operations Evolution Plan	As per SOW requirement	X (draft)				X (final)								T	
DEL-26	Proposed Operations Changes	As per SOW requirement					X								T	
DEL-27	Site Environment Report	As per SOW requirement											X		R	
DEL-28	EGNOS Test Platform Use Plan	As per SOW requirement					X								T	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
DEL-29	Maintenance Activity Report	As per SOW requirement								X					R	
DEL-30	Repair Plan	As per SOW requirement											X		R	
DEL-31	Hardware Maintenance Activity Report	As per SOW requirement						X							R	
DEL-32	Software Maintenance Activity Report	As per SOW requirement						X							R	
DEL-33	Preventive Maintenance Progress Report	As per SOW requirement						X							R	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
DEL-34	Preventive Maintenance Summary Report	As per SOW requirement								X					R	
DEL-35	Infrastructure Rationalization Plan	As per SOW requirement and TS	X (draft)			X (final)									T	
DEL-36	EGNOS Inventory	As per SOW requirement							X					X	R	
DEL-37	Hardware Asset Utilisation Plan	As per SOW requirement	X (draft)			X (final)									T	
DEL-38	Service Provider Requirement Document	As per SOW requirements											X		R	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
DEL-39	Preliminary Change Implementation Proposal	As per SOW requirement and [AD-2]											X		A	
DEL-40	Change Implementation Proposal	As per SOW requirement and [AD-2]													A	
DEL-41	Impact Assessment	As per SOW requirement										X			R	
DEL-42	Obsolescence Survey Report	As per SOW requirement									X				R	
DEL-43	Obsolescence Management Plan	As per SOW requirement									X				R	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
DEL-44	SPEED Access Plan	As per SOW requirement	X (draft)				X (final)								T	
DEL-45	TERESA Tool Plan	As per SOW requirement	X (draft)				X (final)								T	
DEL-46	Tools Plan	As per SOW requirement					X								R	
DEL-47	Project Management Plan	As per SOW requirement and TS	X (draft)		X (final)										T	
DEL-48	Project Schedule	As per SOW requirement							X						R	
DEL-49	Risk Management	As per SOW requirement			X										T	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
	Plan	and TS			(final)											
DEL-50	Risk Register	As per SOW requirements						X							R	
DEL-51	Cost to Completion Note	As per SOW requirement									X				R	
DEL-52	GEO SLA	As per SOW requirement				X									T	
DEL-53	TWAN SLA	As per SOW requirement				X									T	
DEL-54	Security Risk Treatment Plan	As per SOW requirement								X					R	
DEL-55	Staffing Plan	As per SOW	X			X (final)									T	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
		requirement and TS	(draft)													
DEL-56	EGNOS Service Provider Resource Report	As per SOW requirement								X					R	
DEL-57	Training Pack	As per SOW requirement				X									T	
DEL-58	Configuration Management Plan	As per SOW requirement and TS				X (final)									T	
DEL-59	Configuration Status Report	As per SOW requirement										X (for minor	X		R	

ID	Title	Expected Content	Date to be provided to the Customer / Reporting frequency												Approval Level	Comment
			Initial Tender	2 wks before SRKP	KO	SPRR	SHOR	Monthly	Quarterly	Every 6 months	Yearly	Per ESR	Ad hoc	On demand		
												rel.)				
DEL-60	EGNOS Safety Case	As per SOW requirements and [AD-2]				X (final)							X		T, R	

The terms used for the "Approval Level" have the meaning as described below.

Document deliverables for Information (I)
Comprise documentation of routine nature, which contains information, statements, facts or status. Document deliverables of Information type shall be sent to the Customer as soon as approved and issued by the Contractor. A formal response from the Customer is not required. The Customer may however decide to provide comments to the Contractor.

Document deliverables for Review (R)
Documents that are subject to evaluation and review by the Customer prior to their distribution. The Customer shall inform the Contractor of any comments to the document. The Contractor shall review the Customer's comments/recommendations

and advise if they will be implemented. Once reviewed, the Customer shall be informed of any proposed modification, and shall participate to the review through which the document updates are assessed.

Document deliverables for Acceptance (A)

Documents requiring formal approval in writing from the Customer. Any subsequent modification of the document shall be subject to approval by the Customer.

Document deliverables used for the Tender (T)

Documents that shall be used by the Customer during the tender procedure and the Handover Phase. Their subject to review and/or approval by the Customer is specified in the corresponding SOW requirement.

Note: The table above does not contain all the deliverables requested as part of the KPI reporting, which are described separately in [AD-1].

APPENDIX 3: ACRONYMS AND DEFINITIONS

Acronyms

AIV	Assembly, Integration and Verification
AIVQ	Assembly, Integration, Verification and Qualification
ANSP	Air Navigation Service Provider
ASQF	Application Specific Qualification Facility
ATC	Air Traffic Control
ATM	Air Traffic Management
CAA	Civil Aviation Authority
CCF	Central Control Facility
CCN	Contract Change Notice
CIP	Change Implementation Proposal
CMP	Change Management Process
CPF	Central Processing Facility
COTS	Commercial Off-The-Shelf
CS	Commercial Service
CSAR	Configuration Status Accounting Report
DAL	Development Assurance Level
DEPL	Deployment
EASA	European Aviation Safety Agency
EC	European Commission
ECAC	European Civil Aviation Conference
ECSS	European Cooperation for Space Standardization
EDAS	EGNOS Data Access Server
EGNOS	European Geostationary Navigation Overlay Service
ESA	European Space Agency
ESP	EGNOS Service Provider
ESR	EGNOS System Release
ESSP	European Satellite Service Provider
EU	European Union

EWA	EGNOS Working Agreement
EWAN	EGNOS Wide Area Network
FAA	Federal Aviation Administration
FDIR	Fault Detection, Isolation and Recovery
FFP	Firm Fixed Price
FLM	First Line Maintenance
FMECA	Failure Mode Effect and Criticality Analysis
FTE	Full-Time Equivalent
GEO	Geostationary Earth Orbit
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GSA	European GNSS Agency
GSC	GNSS Service Centre
HOR	Hand Over Review
HR	Human Resources
IAR	Infrastructure Acceptance Review
ICAO	International Civil Aviation Authority
ICD	Interface Control Document
IET	Integrated Engineering Team
IPSASs	International Public Sector Accounting Standards
IRD	Implementation Requirement Document
IT	Information Technology
ITAR	International Traffic in Arms Regulation
IWG	Interoperability Working Group
JCAB	Japanese Civil Aviation Bureau
KO	Kick-Off
KPI	Key Performance Indicator
LEO	Library of EGNOS Operations
MCC	Mission Control Centre
MoM	Minutes of Meeting
MOPS	Minimum Operational Performance Standards

MRD	Mission Requirements Document
NLES	Navigation Land Earth Station
NOTAM	NOtice To Air Men
NSA	National Supervisory Authority
ONCR	Operational Non Conformance Report
OR	Observation Report
ORD	Operations Requirement Document
ORFC	Operational Request For Change
OS	Open Service
PA	Product Assurance
PACF	Performance Assessment Check-out Facility
PCIP	Preliminary Change Implementation Proposal
PEA	Product Evolution Activities
PERT	Program Evaluation and Review Technique
PMP	Project Management Plan
PSI	Program Security Instruction
PSS	Product Support Services
PTP	Point-To-Point
QA	Quality Assurance
R&D	Research and Development
RAMS	Reliability, Availability, Maintainability and Safety
REX	Return of EXperience
RIMS	Ranging and Integrity Monitoring Station
RTCA	Radio Technical Commission for Aeronautics
S-CCB	System and Service Change Control Board
SAL	Security Aspects Letter
SARPs	Standards and Recommended Practices
SBAS	Satellite-Based Augmentation System
SDD	Service Definition Document
SDM	System Definition Manual
SHOR	Service Handover Review

SES	Single European Sky
SIS	Signal-In-Space
SLA	Service Level Agreement
SLM	Second Line Maintenance
SoL	Safety of Life
SOW	Statement Of Work
SPEED	Support Platform for EGNOS Evolutions and Demonstrations
SPOC	Single Point Of Contact
SPCD	Service Provision Certificate Delivery
SPMM	Service Provision Management Meeting
SPMR	Service Provision Management Report
SPR	Software Problem Report
SPRD	Service Provider Requirements Document
SPRR	Service Provider Readiness Review
SQR	System Qualification Review
SRKP	Service Readiness Key Point
TERESA	TEsting Receiver for EGNOS using Software Algorithms
TS	Tender Specifications
TLM	Third Level Maintenance
ToR	Terms of Reference
TWAN	Transport Wide Area Network
URD	User Requirements Definition
VRD	Verification Requirement Document
WBS	Work Breakdown Structure
WP	Work Package

Definitions

Term	Definition
Application Specific Qualification Facility (ASQF)	A facility aimed at providing the technical means through which user specific applications can be qualified, validated and certified, as necessary.
Customer	The GSA as contracting authority
EGNOS Product	The EGNOS hardware and software designed, implemented and qualified at sub-system and system levels.
EGNOS System Release (ESR)	A version of the EGNOS Product "as built" and all associated documentation related to functionality, manuals, and qualification evidence.
EGNOS OP	The part of the overall EGNOS infrastructure providing the EGNOS SIS to the end users of one of the 3 EGNOS services (OS, SoL, EDAS).
EGNOS TEST	The part of the overall EGNOS infrastructure used and operated outside EGNOS OP for ESP's internal purposes (i.e. testing/qualification of system upgrades, training, operations qualification).
Performance Assessment Check-out Facility (PACF)	A centralised facility which provides off-line technical support to the rest of the system and in particular to CCF operations.
Procurement	In the context of SoW, the term “procurement” is used to describe the tasks, being integral part of the scope of EGNOS Service Provision contract as such, that are to be carried out by the ESP Contractor in order to acquire (sub-contracted) activities

Term	Definition
	(service or product delivery), from the establishment of technical and contractual specifications (and conclusion of sub-contract(s)), up to the acceptance of the (sub-contractor) deliveries. The term "procurement" is not to be understood as term in the sense of Directive 2004/18/EC of the European Parliament and of the Council; and shall not be interpreted as delegation of powers of authorising officer of GSA in the sense of Council Regulation No 1605/2002 amended by Council Regulation No 1995/2006.