

14 February 2014

Letter of Engagement

For the participation of **Mr. Kevin Judge** in **Specialist Task Force 474** on Interoperability and Integration of Global Navigation Satellite Systems (GNSS) with Telecommunications Systems for the provision of location-based services.

Between

The European Telecommunications Standards Institute (ETSI)

located at:

650, Route des Lucioles
06921 Sophia Antipolis Cedex
France

which, for the purpose of signature of this Letter of Engagement (hereinafter referred to as the "LoE"), is represented by **Luis Jorge ROMERO SARO**, ETSI Director-General

on the one part

and

Judge Software Systems, Inc

located at:

4028 Via Galivan
US - CA 90274 Palos Verdes Estate

hereinafter referred to as the "**COMPANY**", which, for the purpose of signature of this LoE, is represented by **Mr. Kevin JUDGE**

on the other part,

Individually referred to as "PARTY" or collectively referred to as "PARTIES".

Preamble

CONSIDERING THAT:

- ETSI is a non-profit association, whose mission is to produce the ITC standards requested by its Members, using the technical expertise they provide.
- Specialist Task Force 474 (hereinafter referred to as “STF”) is a team of experts from different companies proposed by ETSI Members and working together under the technical guidance of the ETSI Technical Body SES, to achieve the objectives defined in the Specialist Task Force Terms of Reference (hereinafter referred to as the “STF ToR”).
- The experts being part of the STF have the shared responsibility for achieving the objectives defined in the STF ToR. The STF LEADER is responsible for co-ordinating the work assigned to the STF and for allocating the tasks to the experts, according to the requirements of the STF TOR.
- After a selection process of candidates proposed by ETSI Members, the ETSI Director-General, in consultation with the Chairman of the ETSI Technical Body SES, has requested the participation of a specific expert employed by the COMPANY (hereinafter referred to as the “EXPERT”) to participate in the STF because of his skills, knowledge and experience of the subject (hereinafter referred to as the “Purpose”).
- The EXPERT is provided by the COMPANY to fulfil the specified work (hereinafter referred to as the “WORK”) and shall remain at all times an employee of the COMPANY.
- The PARTIES have estimated the effort required to perform the tasks assigned to the EXPERT in terms of an equivalent number of working days, which may be used as a measure of the actual contribution of the EXPERT to the achievement of the collective goal of the STF.
- As consideration for the making available of the EXPERT, ETSI is willing to compensate the COMPANY for such expertise as set forth in this LoE.
- The purpose of this LoE is to define the terms and conditions for the participation of the EXPERT in the STF.

THE PARTIES HEREBY AGREE AS FOLLOWS:

Article 1 Subject of the LoE

This LoE concerns the participation of the EXPERT **Mr. Kevin Judge** in the STF to assist SES to achieve the objectives and the requirements described in the STF ToR provided in Annex 1, in the period from **17 February 2014** to **31 January 2016**.

Article 2 Execution of the WORK

Article 2.1 Technical supervision

The STF, including the EXPERT, shall work under the technical guidance of the ETSI Technical Body SES and/or its appointed Working Groups.

The appointed STF LEADER shall co-ordinate on a daily basis the work within the STF and shall allocate tasks to the experts to achieve the objectives defined in the STF ToR, in accordance with the technical direction given by the Chairman of TB SES. As an interface with the Chairman of Technical Body SES, the STF LEADER will report on the progress of the WORK to the TB Chairman, who has the authority to assess the performance of the STF with respect to the production of deliverables and performance of tasks assigned to the EXPERT.

The EXPERT, who has been selected for his specific qualification in one or more of the domains specified in §7 (Required expertise) of the STF ToR, shall apply his specific knowledge and skills to the best of his ability in co-operation with the other experts of the STF to ensure the production of high quality deliverables.

Article 2.2 Administrative supervision

Pursuant to section 1.10.1 of the ETSI Technical Working Procedures, the ETSI Secretariat is responsible for the recruitment of the Specialist Task Force experts, the management of the financial resources, the establishment of LoEs with the Specialist Task Force experts' Companies, the provision of the necessary support for the Specialist Task Force work and of the deliverables acceptance.

The ETSI PROJECT MANAGER designated under Article 17 shall be responsible for the supervision of this LoE with regard to the application of the ETSI Working Procedures and the timely availability of the STF deliverables according to the requirement in the ToR.

The EXPERT shall work according to the requirements laid down in the "ETSI Directives", and other relevant procedures established by the ETSI Secretariat for the production of deliverables (e.g. ETSI Drafting Rules) and the management of the STF.

The relevant procedures to be applied for the execution of this LoE can be found on the ETSI Portal, at the following addresses:

- ETSI Directives <http://portal.etsi.org/directives/home.asp>
- STF management rules: <http://portal.etsi.org/stfs/process/home.asp>

In all cases, the latest available versions shall apply.

The ETSI Secretariat will inform the EXPERT of any changes in the procedures that are relevant to the execution of the WORK.

Failure to comply with the requirements provided for in the STF ToR or to comply with the instructions of the STF LEADER or with the procedures listed in Article 2.2 of the LoE, shall be treated as a serious breach of this LoE, as described under Article 15 b) below.

ETSI and the COMPANY shall designate a member of their management team as supervisor to serve as liaison to resolve difficulties that may rise from different interpretations of this LoE (hereinafter referred to as "PROJECT MANAGERS", as stated in Article 17). If such problems arise, the PROJECT MANAGERS must be available to participate in preliminary informal discussions on fact-findings as necessary.

In the event that the WORK is not satisfactorily performed or remains incomplete within the period agreed under Article 1, the situation will be reviewed by the STF LEADER, the PROJECT MANAGERS to determine a way forward, without prejudice to the provisions of Article 15.

The PARTIES acknowledge that there is no relationship of subordination between the EXPERT and ETSI and that the EXPERT shall perform the WORK under the direct authority of the COMPANY and shall remain at all times an employee of the COMPANY.

Article 2.3 Replacement of the EXPERT

In the event that the EXPERT named herein ceases to be entitled to perform the WORK for whatever reason, the COMPANY shall make its best efforts propose the replacement of the named EXPERT with another expert of equivalent qualification to complete the performance of their engagement. ETSI shall reserve the right to accept the proposed replacement or to terminate this LoE by written notice without the need of any further formality.

Article 3 Working environment

Article 3.1 Place of WORK

The STF work will normally be performed by the STF, including the EXPERT, in common sessions to be held in the ETSI premises according to a timetable proposed by the STF LEADER in consultation with the STF experts. In such a case, WORK in between STF working sessions can be carried out by the EXPERT outside the ETSI premises.

STF working sessions outside the ETSI premises shall be explicitly authorized, in advance, by the STF LEADER and the ETSI PROJECT MANAGER.

Article 3.2 Working conditions

In the case where the WORK has to be performed by the EXPERT in ETSI premises, ETSI will ensure appropriate STF working environment. This includes office space for the STF sessions and access to IT tools and services during the normal ETSI office hours. In order to allow information exchange between the STF experts and with the TB, the EXPERT shall use the standard STF working environment provided by ETSI.

The PARTIES agree that the EXPERT shall at no time be deemed to be an employee of ETSI, and that the EXPERT shall remain an employee of the COMPANY; however, in order to work efficiently with the other STF experts and the ETSI Secretariat staff, the EXPERT shall endeavour to follow the normal ETSI working hours. Working outside the normal ETSI working hours, during week-ends and other ETSI closing periods shall remain exceptional and must be agreed in advance with the STF LEADER and authorized by the ETSI PROJECT MANAGER.

When working in the ETSI premises, the EXPERT will have the widest possible autonomy to perform the tasks assigned. However, the EXPERT shall strictly follow the health and safety instructions applicable in the ETSI premises, access restrictions and other governing rules applicable to the ETSI Secretariat, provided that ETSI shall have informed the EXPERT of such rules.

When the EXPERT is authorized to perform all or part of the WORK in the COMPANY premises, the COMPANY agrees to make available to the EXPERT the working environment and in particular the IT tools and services as necessary to perform the WORK and to carry any related expenses.

The COMPANY agrees that the EXPERT will be available to perform the work for the STF according to the calendar established by the STF LEADER in agreement with the ETSI PROJECT MANAGER, including the STF working sessions, which may be held in the ETSI premises or in other locations.

Article 4 Mission travels required by the STF activity

Travel and subsistence costs for the EXPERT to join the STF working sessions, either inside or outside the ETSI premises, are included in the flat-rate compensation set out under Article 5.1 of this LoE and shall not be further charged by the COMPANY to ETSI.

In the event that the EXPERT is required by ETSI to attend meetings other than STF working sessions, (i) the mission travel shall be expressly authorized by ETSI with a Travel Order, and (ii) ETSI will reimburse to the COMPANY the real costs for travel and subsistence incurred by the EXPERT, as required to perform the mission, in accordance with the provisions of the ETSI Mission Expenses Reimbursement Rules for STF experts.

In case the EXPERT attends a meeting other than an ETSI Technical Body, he shall produce an executive summary of the outcome of the meeting relevant to the STF work, to be sent to the STF LEADER and ETSI PROJECT MANAGER before submitting the reimbursement claim.

ETSI will reimburse the COMPANY for the actual costs incurred by the EXPERT for the performance of the mission travel, against the presentation of an invoice established by the COMPANY with reference to the Travel Order approved by ETSI and a reimbursement claim with attached copies of the detailed bills, invoices, air tickets, boarding cards and any other element required to justify the actual costs incurred.

Mission travel reimbursement claims should be submitted to ETSI **no later than one (1) month** after the travel has occurred. If this is not possible, the COMPANY shall inform ETSI of the intended amount to be claimed and provide ETSI with all the preliminary documentation that is available to assess such costs.

The EXPERT shall be covered by the mission insurance regime of the COMPANY as he remains an employee of the COMPANY during his work for the STF.

Article 5 Financial conditions

Article 5.1 Compensation

Based upon the analysis of the WORK to be performed by the EXPERT, the PARTIES estimate that the effort required to complete the WORK is **90 (ninety) working days**.

Travelling time to participate in STF working sessions and during missions shall not be included for the purposes of the calculation of these working days.

The amount to be paid under this LoE is not intended to be on a commercial basis; instead, it is deemed to be seen as compensation to cover the real costs incurred by the COMPANY as a result of the performance of the WORK by the EXPERT. In consultation with the European Commission, the daily rate of STF experts has been aligned with the daily rate used in EC/EFTA contracts and it has been decided that each working day shall be remunerated at the standard rate of **600 EUR per day**.

The amount of the compensation under this LoE has been set in relation with the effort estimated by the PARTIES for the execution of the WORK assigned to the EXPERT. ETSI undertakes to compensate the COMPANY for the WORK actually rendered by the EXPERT with the flat-rate sum of **54 000 (fifty four thousand) EUR**, which will be paid to the COMPANY upon fulfilment of the conditions outlined in Article 5.2.

The PARTIES agree that, if the execution of the WORK assigned to the EXPERT within the STF requires a total effort less than the **90** working days estimated in the present article, the compensation may be reduced pro-rata of the total number of working days actually performed.

If more than **90** working days and/or a longer period result to be necessary to complete the WORK, the PARTIES may negotiate a possible extension of the present LoE.

ETSI shall only assume liability for the payments explicitly indicated in this LoE.

Article 5.2 Invoicing and payments

Invoices shall be issued by the COMPANY only after confirmation by ETSI of the achievement of the relevant milestone as indicated in Annex 2.

Invoices shall be issued in EUR and the amount of each invoice shall be calculated pro-rata of the total number of working days actually performed by the EXPERT until the date the achievement of the milestone was due, according to the schedule in Annex 2.

Invoices shall make reference to the LoE number, the period of work, the number of working days executed and to the relevant milestone. The COMPANY shall provide ETSI with the necessary information (e.g. time sheets, reports, deliverables), as required to validate the execution of the WORK.

Invoices shall be addressed to ETSI Financial Contact mentioned in Article 17:

STFLINK
650, routes des Lucioles
F-06921 Sophia Antipolis Cedex
France

The invoice will be verified by ETSI and payment will be made subject to the output/deliverables required for the achievement of the relevant milestone being accepted by the TB Chairman and the ETSI PROJECT MANAGER.

If the invoice is established correctly and all the necessary information has been provided by the COMPANY, payment will be made within 30 (thirty) days upon receipt of the invoice by ETSI.

In the event that the relevant milestone has not been achieved, ETSI shall be entitled to suspend the corresponding payment until the relevant milestone has been achieved. In this case, ETSI will inform the COMPANY in writing of the corrective action to be taken, no later than five (5) working days after it has been reported to ETSI that the outputs/deliverables are non compliant. The STF LEADER will identify the actions and the timeline for the correction of the output/deliverables.

ETSI shall not be considered liable for the payment of invoices received after a period of one year following the expiration date of this LoE, as stated in Article 1 and Article 13.

Article 5.3 Bank account

Payment of all invoices under this LoE will be made by ETSI in EUR to the account held in the name of the COMPANY: account holder name: **Judge Software Systems, Inc**, IBAN number: **011503750205**, SWIFT code: , with the bank **Malaga Bank FSB**, located at **2514 Via Tejon, Palos Verdes Estates, CA 90274, USA**

Article 5.4 Taxation

ETSI is liable to VAT. The European VAT number is **FR14348623562**. As a result of the compensation for this LoE being subject to French taxation, ETSI will pay VAT and any other taxes as requested by the French authorities, with the exception of any personal taxes pertaining to the EXPERT and/or the COMPANY.

Article 6 Obligations of the COMPANY regarding the EXPERT

Article 6.1 General obligations

The PARTIES agree that the EXPERT shall at no time be deemed to be an employee of ETSI, and that the EXPERT shall remain an employee of the COMPANY. However the COMPANY agrees to

cause the EXPERT to comply with the internal rules of ETSI as appropriate to the achievement of the objectives of the STF.

The COMPANY shall ensure that all obligations incumbent upon the EXPERT hereunder, including but not limited to the obligations related to the execution of WORK (Article 2), the working environment (Article 3), mission travels (Article 4), Intellectual Property Rights (Article 7), confidentiality (Article 8), are flow-downed to the EXPERT by an amendment to the employment contract of the EXPERT.

The COMPANY shall continue to fulfil all legal obligations for which the COMPANY is liable as an employer (e.g. salary payment, social security, medical insurance and other employer tax contributions).

In addition, the COMPANY will make adequate provision, whether by insurance or otherwise, to compensate the EXPERT for any injury or illness he may suffer whilst participating in STF sessions, held in ETSI or elsewhere, and/or mission travel authorized by ETSI, in the course of the execution of the present LoE.

On request by ETSI, the COMPANY shall provide ETSI with official documents demonstrating that these obligations have been and continue to be fulfilled.

Article 6.2 Obligations to be fulfilled when the expert works in the ETSI premises

If the COMPANY is not established under the French law, it must complete Annex 3 and return to ETSI for submission to the French labour inspection authorities.

The COMPANY shall ensure that the EXPERT fulfils all the obligations required by the relevant international regulations and French legislation regarding immigration procedures, taxation and social security.

Notably, the COMPANY shall provide the EXPERT with the relevant social security documents to certify the affiliation of the EXPERT to the public Health Care for an EU country (e.g. A1 form) or an equivalent in a non-EU country. A copy of these documents shall be delivered to ETSI prior to the first working session in the ETSI premises. Failure to provide these documents and/or to comply with the obligations deriving from the French law shall be treated as a serious breach of this LoE, as described under Article 15 b).

If the EXPERT contracts an incapacitating illness or sustains an accident which is likely to prevent, or does prevent the EXPERT from fully carrying out the duties under this LoE, the COMPANY shall immediately notify ETSI of such illness or accident for remedial actions to be taken. If the COMPANY so requests, ETSI shall arrange at the expense of the COMPANY, the transport of the EXPERT to his home or to a specified hospital.

ETSI shall secure that its premises comply with the requirements and obligations for safe working conditions under French law.

Article 7 Intellectual Property Rights

By virtue of this LoE, the COMPANY agrees that ETSI owns the copyright to the text, graphics, figures, tables and other content of standards and other publications and software development resulting from WORK done under this LoE.

Regarding other Intellectual Property Right (hereinafter referred to as "IPR") than the copyright stipulated in the preceding paragraph, it is agreed that nothing in this LoE shall be deemed to, or require the COMPANY to transfer, assign or license any of the COMPANY's IPR to ETSI. However, the EXPERT who provides to ETSI information covered by IPR owned or controlled by the COMPANY, for the purpose of its inclusion in standards and standards-related publications, shall use its reasonable endeavours to timely inform ETSI of essential IPRs it becomes aware of. In particular, the EXPERT shall, on a bona fide basis, draw the attention of ETSI to any of the COMPANY's IPR, which might be essential if that proposal is adopted. When such an essential IPR is notified to ETSI, the COMPANY shall inform ETSI in writing as to whether or not it is prepared to grant irrevocable

licences on fair, reasonable and non-discriminatory terms and conditions under such essential IPR as provided by the ETSI IPR Policy.

Article 8 Confidentiality

The COMPANY undertakes not to make use of and not to divulge to third parties any facts, information, knowledge, documents or other matters communicated to the EXPERT or brought to his attention during the performance of the LoE, or any result arising from the WORK which is not publicly available.

The COMPANY shall ensure that the EXPERT will respect the confidentiality of any information brought to his attention during the performance of the WORK and that he will not divulge to third parties or use for his own benefit or that of any third party any document of information not available publicly, even after completion of this LoE.

Upon request from ETSI, the COMPANY hereby undertakes to return to ETSI all confidential information which has been supplied to it including all copies thereof and to delete all information stored in a machine readable form.

The COMPANY shall promptly advise ETSI in writing of any unauthorized disclosure, misappropriation or misuse by any person of confidential information as soon as practicable after it becomes aware of such unauthorized disclosure, misappropriation or misuse. If the COMPANY becomes aware that it will be required, or is likely to be required, to disclose confidential information in order to comply with applicable laws or regulations or with a court or administrative order, it shall, to the extent it is lawfully able to do so, prior to any such disclosure notify ETSI, and comply with ETSI reasonable instructions to protect the confidentiality of the information.

Article 9 Liability of the Parties

In no event shall either PARTY be liable to the other for any special, incidental, indirect or consequential damages or lost profits, lost revenues, lost data.

Article 10 Applicable law

This LoE shall be governed by French law without any application of conflicts of law rules.

Article 11 Jurisdiction

In the event of a dispute arising out of or in connection with the present LoE, which cannot be solved amicably between the PARTIES, the competent Court of Grasse, France, shall have exclusive jurisdiction to settle such dispute.

Article 12 Successors and Assigns

This LoE shall bind and inure to the benefit of the successors of the COMPANY and ETSI respectively. This LoE and the rights and obligations hereunder shall not be assigned by either of the PARTIES in whole or in part without the prior written consent of the other PARTY.

Article 13 Duration

Upon its signature by both PARTIES, this LoE shall take effect on the first date mentioned in Article 1 ("Effective Date") and shall last for the period specified in Article 1, unless earlier terminated in accordance with Article 15. The EXPERT shall not start to perform any WORK under the LoE before

the LoE is signed by both PARTIES and any other documentation requested under this LoE has been provided.

Article 14 Entire agreement and amendments

This LoE constitutes the entire agreement between the COMPANY and ETSI on the participation of the EXPERT in the STF and supersedes all prior or contemporaneous oral and written representations, understandings or agreements relating to the subject matter hereof. This LoE may be amended only by a written agreement signed by an authorized representative of the COMPANY and ETSI.

Article 15 Termination of the LoE

a) Each PARTY may, on its own convenience, terminate this LoE for any reason and at any time during the term of the LoE by giving formal notice ONE (1) month in advance.

b) In the event of a serious breach of any of the obligations of this LoE by the COMPANY, ETSI shall give the COMPANY written notice describing such breach by registered letter, and if the Company fails to cure such breach within seven (7) business days, ETSI may terminate the LoE by written notice without the need of any other formality.

In case of termination pursuant to items a) and b) of this Article, payment of any outstanding balance of the compensation set forth in Article 5.1 shall be determined by the ETSI Director-General on the basis of the value for ETSI of the WORK actually performed by the EXPERT.

Article 16 Annexes

The following annexes form an integral part of the present LoE:

- Annex 1 - STF Terms of Reference (ToR)
- Annex 2 - Milestones
- Annex 3 - Form for French Labour Inspection Authority
- Annex 4 - Support from an ETSI Member

In case of inconsistency between the provisions of the main text of this LoE (Article 1 to Article 17) and the provisions of the Annexes, the provisions of the main text shall prevail.

This LoE is made in two originals in English, one of which is for the COMPANY and the other one for ETSI.

Article 17 Contacts

The PARTIES appoint the following persons as Technical and Administrative Contacts for the execution of this LoE:

PROJECT MANAGERS

For the COMPANY

Mr. Kevin JUDGE

Role/title:
e-mail: kjudge@judgessoftwaresystems.com
Tel: 1 310 850 5936
Mobile:

For ETSI

Mr. Alberto BERRINI

ETSI STF Senior Technical Officer
e-mail: alberto.berrini@etsi.org
Tel: +33 4 92 94 42 64
Mobile: +33 6 30 67 93 61

The PARTIES appoint the following persons as FINANCIAL CONTACTS for the execution of this LoE:

FINANCIAL CONTACTS

For the COMPANY

Mr. Kevin JUDGE

Role/title:
e-mail: kjudge@judgessoftwaresystems.com
Tel: 1 310 850 5936
Mobile:
Fax:

For ETSI

STFLINK

ETSI STF Support Department Director
e-mail: STFLINK@etsi.org
Tel: +33 4 92 94 42 00
Fax: +33 4 93 65 47 16

Postal address:

4028 Via Galivan
US - CA 90274 Palos Verdes Estate

Postal address:

STFLINK
650, routes des Lucioles
F-06921 Sophia Antipolis Cedex
France

IN WITNESS WHEREOF, the PARTIES hereto, through their duly authorized representatives, have entered into this LoE as of the Effective Date.

For Judge Software Systems, Inc

Mr. Kevin JUDGE

Role/Title

For ETSI


Mr. Luis Jorge ROMERO SARO

ETSI Director-General

Date:

Date:

Annex 1 STF Terms of Reference (ToR)

	ToR STF 474 (TC SES/ WG SCN)
	Version: 0.0
	Technical Proposal agreed by EC/EFTA – Date: 24 July 2013
	Last updated by: Alberto Berrini – Date: 30 October 2013
page 11 of 29	

Terms of Reference - Specialist Task Force

STF 474 (SES/SCN)

Interoperability and Integration of Global Navigation Satellite Systems (GNSS) with Telecommunications Systems for the provision of location-based services

SA/ETSI/ENTR/496/2013-05

Summary information

Approval status	Technical Proposal approved by ETSI Board (AbC ending 17 July), submitted to EC/EFTA on 24 July 2013) and agreed without changes. Pending signature of Grant Agreement.
Funding	183 000 €: 280 working days at 600 € (168 000 €) and 15 000 € for travels
Time scale	1 January 2014 to 31 January 2016 (Final Report and published deliverables)
Work Items	DTS/SES-00331 GNSS Location Systems Reference Architecture DTS/SES-00332 GNSS Location System Performance Requirements DTS/SES-00348 Requirements for the location data exchange protocols DTS/SES-00349 Test specification for system performance metrics.

Part I – Policy relevance and expected market impact

1 Policy relevance

This proposed action is designed primarily to reply to important standardisation tasks in response to mandate M/496 ("Mandate Addressed to CEN, CENELEC and ETSI to Develop Standardization Regarding Space Industry) and a number of the Sectorial Dossiers identified in the mandate. These Dossiers resulted from the earlier programming report under mandate M/415 ("Programming Mandate Addressed to CEN, CENELEC and ETSI to Establish Space Industry Standards") and in particular its phase 2 report. This report stated the standardisation needs and prepared a comprehensive standardisation work programme for each identified space sector and application.

The work described below is aimed at satisfying some the specific requirements of several Sectorial Dossiers of M/415 and M/496, primarily:

- Dossier 1 - Navigation and Positioning (NP) Receivers for Road Applications and Airport Services,
- Dossier 4 - Interoperability and Integration of Mobile Satellite Systems (MSS) and Fixed Satellite Systems (FSS) with Terrestrial Systems, in particular Next Generation Networks (NGN), and with Global Navigation Satellite Systems (GNSS) in particular Galileo.

In addition, the work to be performed could contribute to the following dossiers:

- Dossier 2 - Integration of Navigation and Positioning (NP) Applications with Telecommunications (TEL) (which is covered by Dossier 3),
- Dossier 3 - Information Exchange, including Data Format, in support of applications defined in a "System of Systems" environment (in particular inside and between Earth Observation (EO), Navigation and Positioning (NP), and Telecommunications (TEL)),

Mandate M/496 defines the priorities with which the ten Sectorial Dossiers are to be treated in standardisation bodies, and it is highly relevant that **the highest priority is given to “Sectorial dossiers linked with the programmes Galileo and GMES”** (see clause 4.9), which are represented as Global Navigation Satellite Systems (GNSS) as the subject of this proposal.

The work proposed here responds to a need to establish complementary standards which do not exist at present for a set of fundamental system architectures combining telecommunication networks with GNSS (e.g. Galileo) and other navigation technologies for the delivery of location-based services. In so doing a standardisation framework will be developed that will be applicable to many domains of application of GNSS in cooperation with other systems, such as Telecommunications, Next Generation Networks (NGN), Mobile Satellite Systems (MSS), Fixed Satellite Systems (FSS) and Earth Observation, which may contribute to a "System of Systems" environment.

Progress of the proposed standardization activity covered by this proposal will also be reported to CEN/CENELEC TC5 for the coordination of any related activity with Dossiers 2 and 3 as well as with the ESO M/496 Coordination Group.

2 Rationale

2.1 Interaction with end-users and R&D actors

The focus of the proposed work is on the growing use of complex location systems to satisfy the expansion of location-based applications in the mass-market.

A location-based application delivers a service to a user or external entity, based on the location of one or more mobile targets, and to do this the application makes a request to an associated location system. The integrated system configuration envisaged is the case where GNSS systems are integrated with these other systems and with external service providers in order to support these location-based services.

There is no single standards body responsible for this type of GNSS standardisation, but several standards bodies have generated standards for limited ranges of applications and systems within their brief. Hence up to now, location-based technologies have been specified partially and independently in these bodies leading to:

- inconsistent GNSS-related requirements from one group to the other
- sub-optimal requirements resulting from possible lack of expertise in GNSS in some groups
- slow market uptake of GNSS technologies

The purpose of the proposed action is to establish a firm and common basis for fundamental GNSS system standards which would offer valuable support to other standardisation groups/bodies in GNSS aspects.

The background to, and objectives of, this work have been described in some detail in two ETSI Technical Reports:

- 1) ETSI TR 103 183 “Satellite Earth Stations and Systems (SES); Global Navigation Satellite Systems (GNSS)-based applications and standardisation needs”.
- 2) ETSI TR 101 593 “Satellite Earth Stations and Systems (SES); Global Navigation Satellite System (GNSS)-based location systems; Minimum performance and features”.

In summary, an analysis has been made of existing telecoms standards issued by the ITU, 3GPP, RTCA, RTCM and the Open Mobile Alliance (OMA). Cooperation with these other standards bodies will be sought in order that this activity produces a consensus on the results of the work.

The analysis has identified the standardisation gaps and the relevance of each of these standards to GNSS systems with a view to establishing a complete set of standards covering the main features of GNSS including:

- Location system architecture
- Interfaces
- Protocols
- Performance
- Operational environment
- Test procedures

The Integral Satellite Initiative (ISI) European Technology Platform (ETP) represents the interests of many actors in this research domain. Through its Strategic Research Agenda the ISI technology platform amplifies the needs in this domain and describes a programme of R&D which includes the objectives defined in this proposal.

(For more details, see the Integral SatCom Initiative European Technology Platform Strategic Research and Innovation Agenda – Edition 2011, section 5, “Enabling research topics”)

3 Objective

It is clear that existing standards suffer from a number of limitations when addressing the standardisation of architecture, interfaces and performance of Location Systems suited to a wide scope of applications. In particular the following gaps and needs for new standards are identified:

1. Civil aviation standards address a specific field of application, including safety issues.
A new standard is needed to adapt the aviation domain to a wider range of GNSS non aviation applications as considered here.
2. ITU Recommendations cover particularly propagation conditions, and RF interference impact on L1 GNSS signals, which can be exploited in the global standard under construction. However, concerning definition of system architecture, interface and minimum performance, little definition is made.
A new standard is needed to fulfil this need.
3. In the maritime domain, a relevant standard specifies "Receiver Equipment - Performance Standards, Methods of Testing and Required Test Results". However, this is restricted to maritime use with maritime receiver technology.
A new standard is needed to adapt the maritime domain to a wider scope of GNSS non maritime applications as considered here.
4. Terrestrial mobile telecommunications standards (e.g. 3GPP and OMA) may be the most applicable standards for Location Services (LCS) as they provide definitions of the system architecture, interfaces and protocols, in a form which seems compatible with the required standardization work. However, these standards suffer from a lack of certain technologies in terminals (e.g. performance specifications), since they only consider GNSS receiver and communications modems for location purposes.
A new standard is needed to extend the system architecture, interface, protocol and performance definition to new enablers such as Inertial Navigation Systems (INS), smart antennas, or any new sensor supporting location functions. The range of applications should also be widened.

Hence this GNSS standardisation work will address complementary aspects of existing standards, taking into account the areas identified above where standards are still needed and focusing them in particular under the headings of:

- 1) reference system architecture for combined location systems satisfying a wide range of applications, including functional blocks (e.g. terminals and servers) and their interfaces
- 2) performance requirements and test procedures for these combined systems for given applications and environments

A comprehensive set of relevant location-based applications has already been identified in ETSI TR 103 183. These can be grouped into a reduced number of classes of applications having similar needs, which can be used as a basis for scenarios to which the reference architecture will be applicable.

These classes are:

- a) Location Based Charging
- b) "Pay As You Drive" (PAYD) charging
- c) Non-cooperative geo-localization (possibly applied to fleets)
- d) Reliable geo-localization (including dangerous, precious and/or sensitive cargos)
- e) Reliable Vehicle movement sensing

Based on these classes, users' application requirements will be defined, followed by the translation of them into system requirements in order to specify key functions of a location system and their associated performance.

In particular the following features will be addressed:

- user integrity and privacy control
- velocity and time determination functions
- ability to operate under jamming, spoofing and meaconing conditions

The key functions of the location system will be mapped into the reference system architecture, which will include a definition of functional blocks and the interfaces between them and to external systems. This action will result in the production of 4 ETSI TS's (as defined in section 7.3 of this proposal).

4 Expected market impact

4.1 Benefits and impact

There is a wide range of existing and potential user-oriented applications for location-based systems which could be enabled and developed by the market if there were a better, more consistent, more fundamental and complementary basis to the standards in this domain. This could eventually lead to a set of European Standards.

Europe wishes to gain maximum benefit from its investment in GNSS and associated services, and the adoption of standards for location services is paramount for the achievement of this goal.

European standards are needed to give confidence to industry to enable them to further develop and invest in products that will be accepted by the market and will be interoperable with other system components produced elsewhere. In this way the market will be developed more quickly and competitively as a wider range of applications will be addressed.

On the other hand the lack of appropriate standards for location services could also lead to a fragmented market adopting the undesirable feature of too many proprietary implementations.

As ETSI is a leader in telecommunications standardisation, it is expected that further developing this activity as part of ETSI's portfolio will provide greater visibility to industry of the solutions considered in assisting their acceptance.

The application scenarios and environments along with the reference architectures to be defined should help European research projects addressing the development of technologies or the provision of new services to converge on common approaches to application and system development.

4.2 Stakeholder engagement

It is important to build consensus among stakeholders in the results of the work in order to encourage maximum impact and adoption of the solutions to be specified. The stakeholders who will be approached and engaged where possible in this process include all relevant standards bodies, regulators, industrial companies and research organisations.

As a specific element in the stakeholder engagement, coordination with the FP7 SUNRISE project (<http://www.sunrise-project.eu/>) will be established to involve user groups. Indeed, SUNRISE proposes to establish User Fora addressing the two major markets for GNSS-based applications: Intelligent Transport Systems (ITS) and Location-Based Services (LBS).

Part II - Execution of the work

5 Methodology, approach and expertise

This proposed action will be performed by an ETSI STF (Specialist Task Force) under the management, monitoring and responsibility of TC SES and its SCN WG (or by an STF Steering Committee (STF-SC) that may be set up by the SCN WG if considered to be necessary).

The experts will be recruited and selected using the normal ETSI procedures according to the ETSI Directives; i.e. an open "Call-for-Experts" followed by a STF Preparatory Meeting where a shortlist of candidates are interviewed and a final selection is made.

The allocation of resources to the tasks will be agreed by the SCN WG. The technical work of the STF will be reviewed by the SCN WG and the STF will report to meetings of SCN WG. Conference calls will also be held when appropriate. Face-to-face meetings will occur when needed in connection with the WG meetings and TC meetings. However the wider membership from TC-SES will also be encouraged to actively participate as the deliverables will formally be approved by them.

The STF will produce the ETSI Technical Specifications defined in clause 7.3 of this proposal.

The internal communications and database of the STF will employ an STF-mailing-list and the ETSI STF "docbox".

The work will be based on the background described in:

- ETSI TR 103 183 "Satellite Earth Stations and Systems (SES); Global Navigation Satellite Systems (GNSS)-based applications and standardisation needs".
- ETSI TR 101 593 "Satellite Earth Stations and Systems (SES); Global Navigation Satellite System (GNSS)-based location systems; Minimum performance and features".

Participation in workshops and conferences by the STF Experts and the SCN WG members will be encouraged to disseminate the results of the work. The proposed budget includes support for such events.

Liaison and cooperation with C/CLC TC5 and also the M/496 Coordination Group will be important aspects of the work in order to ensure a coherent approach and a consensus across the groups involved.

Co-ordination with other relevant stakeholders, including manufacturers, operators, research institutions, as well as standards organisations and projects will also be necessary to achieve the best outcome of this work. Stakeholders will be encouraged to provide comments and input to the ETSI deliverables, either at SCN-WG review meetings and events or by e-mails, and by providing critical review of the STF work. Stakeholders will also be encouraged to contribute to the dissemination of the work by attendance at workshops and conferences, as a complement and addition to the dissemination by the STF experts themselves.

5.1 Expertise required

Number of experts required: up to 4 experts.

The exact number of experts and their mix of skills may depend on the number and skills of the applications received and will be decided when setting up the STF.

Roles and qualifications required:

One expert will be responsible for managing the STF (STF Leader), TS drafting/editing, coordination and reporting, with experience in:

- standards specification authoring,
- satellite telecoms research and engineering,
- Network architecture engineering
- Project leadership experience and reporting.

Two or three experts for generating the content of technical specifications required for with appropriate experience in:

- GNSS systems research and engineering
- Hybridized Navigation and positioning
- Location-based applications and location services
- Integrated Network and services engineering
- Performance specification
- Standards specification and generation
- Protocol specification
- Test specifications.

6 Performance indicators

ETSI will provide information that will act as performance indicators on this activity in the following cases:

6.1 Effectiveness:

Details of the number of participants in the activities at all levels, including attendance at Steering Committee meetings, attendance at TC SES SCN-WG and TC-SES plenary meetings, commenting on drafts throughout the lifetime of the development of the ETSI TS's will be recorded. Details will also be provided on the number of participants involved in electronic working, both via the email lists (Reference Group) and the STF ETSI Portal and web pages.

A separate project management report will provide details on the achieved production schedule in relation to that set down for the work items in the contract, including deliveries on time with required content and quality.

Proposed benchmarks:

- Two draft versions plus the final version of each deliverable announced and promoted through e-mail and the ETSI Portal and web page of the STF (publicly available from the ETSI web site);
- 90 % of milestones achieved on time.

6.2 Stakeholder engagement

An analysis will be provided of the wider stakeholder representation in the activity, including manufacturers, operators, application and service providers, other standardisation bodies and EU and ESA funded research activities.

Proposed benchmarks:

- 2 experts involved in SCN WG/steering group activities during the lifetime of the STF, actively contributing to the work through the various available channels;
- 6 SCN WG/steering committee meetings to collect input from various sources and to progress the draft deliverables;
- 4 liaisons with other bodies (mostly informal as it will be done through informal mechanisms such as reports from the STF work as part of overall liaisons from TC SES or directly from the TC SES SCN WG).

6.3 Dissemination of results:

Proposed benchmarks:

- STF Web page (e.g. via the ETSI STF pages on the ETSI Portal) which is publicly accessible and which offers a download area for flyers and draft documents.
- Two presentations made at conferences, workshops, symposia or standards bodies meetings;
- Two articles for the ETSI standards newsletter.

7 Work plan, milestones and deliverables

7.1 Work plan

The work is organised into 5 separate tasks as shown in 7.2:

Task 1: STF Initialisation

The STF will expand the initial plan defined at the STF selection meeting and will identify relevant input such as available standards, recommendations, published research and reports on ongoing studies and relevant stakeholders. A publicly available Web site will be created and published via the ETSI Portal. The Web site will provide information on the STF's goals, the team, contact information, time plan and further details of the work, together with the work plan covering milestones. The draft ETSI deliverables will subsequently be made available for comments and input via the STF Web site.

Planned duration: 2 months.
Planned resources: 20 man days.
Planned timescale: 2 months following the date of signature of the EC/EFTA action grant and 1 month at the intermediate review.
Deliverables: STF work plan, STF Web site.

Task 2: Location System Reference Architectures.

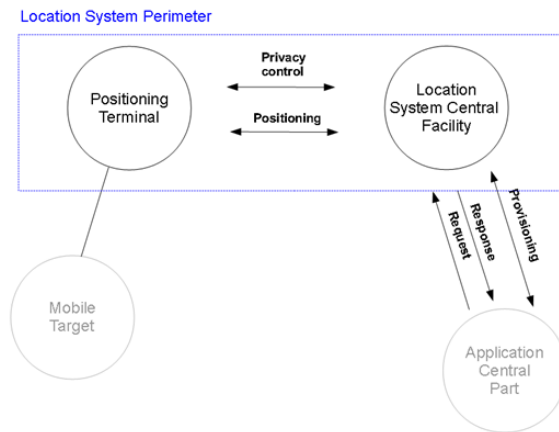
The task involves two successive activities, each one leading to the release of one ETSI Technical Specification.

Task 2a:

The entire standardization process executed is based on the concept of "Location Systems" rather than a single terminal (GNSS receiver).

This concept has been introduced not only in the TC-SES discussions (initiated under former MSS working group) but also among most of the "location" business actors. It naturally arose from the growing needs in this domain in terms of technical features (authentication, integrity, connectivity, etc.).

Consequently, an important effort was spent to define a generic perimeter and content of a typical location system. This definition is already advanced and reminded here below.



This activity is considered as a cornerstone of the entire process.

The objective of this task is to complete this definition, and formalize it as a Technical Specification.

The definition will be completed:

- Based on a review of state of the art techniques, in particular regarding any new type of sensors considered relevant for our task and which shall be added in the reference architecture.
- The reference architecture will also be defined so that it allows a modular implementation. Indeed, given the objective to unify the needs from a wide spectrum of technical domains, we cannot consider defining a unique architecture. The selected reference architecture will therefore be constituted of an exhaustive list of building blocks and associated interfaces, but it will be possible to define additional types of architectures, selecting a subset of blocks, in particular at positioning terminal level. Thus several classes of terminal will be defined, all based on the reference architecture.
- Thus, based on the proposed strategy, a number of terminal types, equipped with a sub-set of sensors will be defined (e.g. type "GNSS stand alone", or "GNSS + inertial"), so that the standard will not only apply on systems matching exactly the above architecture.
- In addition, the architecture shall exhaustively define all the architecture constitutive blocs and interfaces. Indeed, the strength of the generated standard is to provide a converged standard, which will allow actors from very specific niche markets to benefit from a more important variety of solutions, components or functions available, all simultaneously compatible to the standard and therefore to their specific needs.
- Finally, the reference architecture will be completed keeping in mind that its capacity to keep on evolving will be a key contribution to the adoption and use of the standard, beyond the project lifecycle. This capability will be ensured together with the previous one, i.e. the modular implementation: as new technologies or sensors arise (from new user needs), the reference architecture will be extended to cover these new equipments.

The concepts described in ETSI TR 101 593 will be used as a basis.

Duration: 11 months (end S+11).

Resources: 50 man-days

Task 2b:

The activity proposed to be carried out under this task is the definition of the requirements for the location data exchange protocols between the positioning terminal and the location system central facility, and analyses the interactions between the location system and 3rd party application providers. This aspect has indeed only been briefly tackled in the preparatory work leading to the redaction of the ETSI Technical Report 101 593.

The objective is to carry out an analysis of the existing data exchange protocol among the various standardisation bodies, in order to assess their suitability to present framework. In particular, OMA LOC protocols will be looked at, according to the output of the analysis:

- Either identify and trigger the extensions of the existing protocols on the present framework
- Or if analysis results show that no existing standardized protocol is suitable, develop the requirements to build a new one.

The data planned to be covered in this TS concerns mainly:

- The assistance data exchanged between the terminal and any external aid provided;
- The location information reported by the terminal;
- The signalling protocol, internal and external to the location system / positioning terminal (e.g. reception of location request from application provider).

Duration: 12 months (end S+24).

Resources: 50 man-days

Task 3: Location System Performance

The task involves two separated activities each one leading to the delivery of one ETSI Technical Specification:

Task 3a:

Task 2b deals with the generation of Technical Specification related to the Minimum Performance Requirements for Location Systems.

The standard is proposed to be defined function of:

- The performance feature interested in (key performance Indicators to be specified, such as accuracy, availability, Time to First Fix, etc ... refer to the ETSI TR 101 593 for a complete description);
- The type of terminal expected to be used to provide location;
- The type of environment and use scenario in which the terminal will be used.

For each triplet of the above parameters, a minimum performance requirement will be provided by the standard. Consequently, the activity related to its definition shall handle the following aspects:

- First of all, the types of performance to be standardized need to be selected, for instance: accuracy, availability, robustness vs. interference, etc. A first set of common performance has been selected in the ETSI TR 101 593, but it is considered useful to oppose this set to the user community.
- Second, the types of terminal for which the performance will be specified. Here again, the terminal types used for the standard definition shall be realistic versus the terminal actually needed by location business actors.
As far as the terminal types identification is concerned, the work will be inspired from ITU Recommendation ITU-R M1477, in continuity of the work already achieved in SUGAST.
- Third, the types of environments applicable when determining the location performance need to be defined, here again out of the survey executed on other stakeholders.

And finally, the formal performance specification shall be provided. Preliminary assessments have been provided in TR 101 593. The task shall consolidate the performance requirements already provided, together with the requirements still to be defined.

Duration: 18 months (end S+18).

Resources: 50 man-days

Task 3b:

This task covers the generation of the test procedures to measure the system performance metrics for selected architecture options and the associated operational conditions. This allows to provide an “end to end” standard. This specification will be addressed after task 3a, since we first need to define what to test.

The definition of the performance testing methods and procedure is associated to a number of challenges:

- First, the problem to be solved is to build a test specification allowing to issue clear procedure in order to test the various performance listed in the dedicated TS (see task 3a). This problem has therefore an important number of degrees of freedom: variety of sensors, terminal types, environments and scenarios, etc.
This requires a clever solution, which shall allow to produce an appealing specification (i.e. limiting the number of test procedures, synthesizing at most the tests), but which would still allow to be compatible with the defined minimum performance standard (i.e. with the adequate level of coverage).

The second challenge faced when dealing with the performance testing is mentioned in ETSI TR 101 593:

- The performance specifications will be issued function of environments.
- Consequently, the test conditions and scenarios shall be able to reproduce those environments
- Therefore, the alternative is as follows :
 - Basic environment models are easy to reproduce in test and performance is easily predictable, but with little representativity of actual “real life” environments (typical example: Multipath model envisioning 1 single indirect beam)
 - Real environments definition will be much closer to what the terminal will face in operational deployment conditions, but they come with important problem in terms of reproducibility, performance prediction and proper definition to be included in a test specification.

Duration: 12 months (end S+24).
Resources: 50 man-days

Task 4: STF Coordination, Reporting

This task involves:

1. Coordination of the work of the STF in terms of meeting objectives and deadlines
2. Liaison between ETSI, the SCN WG and TC SES and the other experts
3. Attending meetings with the SCN WG and TC SES as necessary,
4. regular reporting of STF outputs to the SCN WG and to TC SES where necessary,
5. Editing TS's and ensuring minimum standards quality.
6. presentation of summary results to conferences, symposia or standards bodies
7. Maintenance of the STF Website.

Duration: 25 months
Resources: 50 man-days
Deliverables: STF Progress reports to the SCN WG as required.

Task 5: EC/EFTA reports

The task involves generating:

1. An Interim Report to EC/EFTA at the end of the first year. The Interim Report will report on the activity performed by the STF under the tasks outlined in this proposal. Details of the actions undertaken up to that stage of the work will be described and a copy of the latest draft of the available ETSI TS at that time will be provided with the report.
2. the Final Report to EC/EFTA at the end of the second year. The Final Report will provide an overview of the work performed for the project with an emphasis on the period since the Interim Report. The Final Report will also include details of the final resource usage in relation to that provided by the financing plan plus the publication versions of the ETSI TS's for information. Also, information related to the Performance Indicators described in this proposals and an analysis of the benchmarks will be provided as a separate annex.

Planned duration: 2 months.

Planned resources: 10 man-days (5 days for each report).

Deliverables: STF Interim Report and Final Reports to EC/EFTA

7.2 Milestones

Task	Months (Start + n)																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1. STF set-up																										
2a.												D														
2b.																									D	
3a.																									D	
3b.																									D	
4. STF Coord.																										
5. Reports to EC/EFTA												R														R

N.B. D=deliverable (ETSI TS), R=Report to EC

7.3 Deliverables

The STF will produce the following deliverables (external to ETSI):

Work Item	Subject	Task	Due Date
	Interim Report	Task 5 - EC/EFTA reports	S+12
DTS/SES-00331	GNSS Location Systems Reference Architecture	Task 2a	S+12
DTS/SES-00332	GNSS Location System Performance Requirements	Task 3a	S+24
DTS/SES-00348	GNSS based location systems; Requirements for the location data exchange protocols	Task 2b	S+24
DTS/SES-00349	GNSS based location systems; Test specification for system performance metrics.	Task 3b	S+24
	Final Report	Task 5 - EC/EFTA reports	S+25

Part III: Financial part

8 Costs, Manpower and In-Kind Contributions

8.1 Total action costs

The total cost for this action is 273 000 € as described in the table below:

	Total €
Expert manpower	168 000
Travel	15 000
Total EC Contribution	183 000
Contributions in-kind	90 000
TOTAL	273 000

8.2 Expert manpower

Total cost for STF manpower resources: 280 working days at 600 € per day: 168 000 €.

Number of experts required: 3 or 4 experts for a total of 280 days

8.3 Travelling costs:

Total estimated cost for travelling: 15 000 €.

At least one expert (expected to be STF leader but may be another team member if necessary) will participate in the following:

- Steering group meeting co-located with SCN WG meetings, up to six meetings over the 2 years period
- Technical Body, TC SES Plenary
- Other meetings e.g. meetings with stakeholders, liaison with other TBs, and standards bodies
- Presentations of the work:

The precise plan can only be developed once the proposed STF begins its operations and has the chance to examine and specify work and meeting agendas in detail. At this stage, it is anticipated that up to 2 trips will be performed during the lifetime of the STF including for example:

- Major industry events such as conferences, congresses and meetings, including:
- Research representatives for coordination and addressing and inclusion purposes (if beneficial to the work): European 7th Research Framework Programme relevant meetings and activities including relevant ENTR or ICT Conferences and other meetings of relevance organized by policy makers;
- STF Consensus building Workshops and meetings

8.4 In-kind contributions:

The in-kind contribution is indicated in the relevant estimated financial budget and will follow the provisions of Article II.15.5 of the Framework Partnership Agreement between ETSI and the European Commission signed on 04 February 2009. An in-kind contribution amounting to 90 000€ (the equivalent of 150 man-days) will be provided as an element of the co-financing of this action. These man-days will be justified by signatures for specifically designed attendance sheets by participants in the planned activity. Signatures at TB and reference body meetings (ETSI) will be valued at three times the one day signed for. Signatures from other standards body meetings, workshops, consultations, etc. will be solely for the eligible day or half-day. A further component of this in-kind contribution total may also be provided by ETSI member companies as support to the STF expert work. Such contributions will be properly recorded and justified. The total cost of funding via in kind contribution is 90 000€ (32.97% of the total action cost).

9 Document history

	Date	Author	Status	Comments
0.0	30-Oct-2013	Berrini	Technical proposal accepted by EC/EFTA	

Annex 2 Milestones

Payments will be made upon confirmation by the ETSI Secretariat of the achievement of the milestones indicated in the following table.

Code	Milestone description	Destination	Cut-off date
A	<p>Progress Report#1 approved by SCN#9 (2-4 June 2014) and stable drafts of DTS/SES-00331 (Task 2a, Architecture) and DTS/SES-00332 (Task 3a, Performance Requirements) presented to SCN#9 for review.</p> <p>The draft documents must be uploaded by the STF Leader on the SCN contributions area of the ETSI Portal at least one week before the start of the meeting.</p> <p>The Progress Report will refer of the input provided by WG SCN, how this has been integrated in the deliverables and the level of development of the drafts.</p> <p>If the level of maturity of "Stable Draft" cannot be achieved, the causes will be discussed and corrective actions will be agreed between the STF Steering Group, STF Leader and the ETSI Secretariat.</p>	ETSI	04/06/2014
B	<p>Progress Report#2 approved by SCN#10 (date tbd, in Oct 2014) and final drafts of DTS/SES-00331 (Task 2a, Architecture) and DTS/SES-00332 (Task 3a, Performance Requirements) presented to SCN#10 for WG approval.</p> <p>The draft documents must be uploaded by the STF Leader on the SCN contributions area of the ETSI Portal at least two weeks before the start of the meeting.</p> <p>If the level of maturity of Final Draft for WG approval cannot be achieved, the causes will be discussed and corrective actions will be agreed between the STF Steering Group, STF Leader and the ETSI Secretariat.</p>	ETSI	30/09/2014
C	<p>Interim Report to be approved by EC/EFTA. The Interim Report must be delivered by the STF Leader to the ETSI Secretariat before 1 December 2014. The deadline for delivery to EC/EFTA by the ETSI Secretariat is 31 December 2014; EC/EFTA approval is expected before 15 February 2015).</p>	EC/EFTA	31/12/2014
D	<p>Progress Report#3 approved by WG SCN, and stable drafts of DTS/SES-00348 (Task 2b, Protocols) and DTS/SES-00349 (Task 3b, Test system performance) presented to SCN for review. These documents may be submitted for approval and review by correspondence, if no SCN meeting is scheduled in December 2014.</p> <p>The Progress Report will refer of the input provided by WG SCN, how this has been integrated in the deliverables and the level of development of the drafts.</p> <p>If the level of maturity of "Stable Draft" cannot be achieved, the causes will be discussed and corrective actions will be agreed between the STF Steering Group, STF Leader and the ETSI Secretariat.</p>	ETSI	31/12/2014
E	<p>Progress Report#4 approved by SCN#11 (date tbd, in Feb 2015) and final drafts of DTS/SES-00348 (Task 2b, Protocols) and DTS/SES-00349 (Task 3b, Test system performance) presented to SCN#11 for WG approval. The draft documents must be uploaded by the STF Leader on the SCN contributions area of the ETSI Portal at least two weeks before the start of the meeting.</p> <p>If the level of maturity of Final Draft for WG approval cannot be achieved, the causes will be discussed and</p>	ETSI	31/01/2015

	corrective actions will be agreed between the STF Steering Group, STF Leader and the ETSI Secretariat.		
F	Final Report and final draft of the four TSs approved by TC SES in April 2015 and accepted by the ETSI Secretariat for publication, in May 2015.	ETSI	31/03/2015
G	Final Report approved by EC/EFTA. The Final Report must be delivered by the STF Leader to the ETSI Secretariat before 1 May 2015.	EC/EFTA	31/05/2015

Note: The cut-off date indicated in the table corresponds to the date each milestone is due, according to the time scale agreed between the PARTIES as a result the analysis of the WORK in Article 5.1.

With reference to Article 5.2, invoices for the achievement of a milestone shall be issued pro-rata of the number of working days performed by the EXPERT until the "cut-off date" indicated in the table and this independently of the date the milestone has actually been achieved.

Annex 3 Form for French Labour Inspection Authority

Cerfa N° 13816*02 Modèle 2

DECLARATION PRÉALABLE DE DETACHEMENT
(Posting of worker's declaration)
(Mobilité intragroupe)
(Intragroup mobility)

DÉTACHEMENT TRANSNATIONAL DE TRAVAILLEURS ENTRE ÉTABLISSEMENTS D'UNE MÊME ENTREPRISE OU ENTREPRISES D'UN MÊME GROUPE
TRANSNATIONAL POSTING OF WORKERS BETWEEN ESTABLISHMENTS BELONGING TO THE SAME COMPANY OR COMPANIES OF THE SAME GROUP

À remplir par l'entreprise étrangère (employeur) *To be filled by the employer*
Article R. 1263-4 du code du travail *Article R. 1263-4 of Labour Code*

ENTREPRISE ÉTRANGÈRE (EMPLOYEUR) FOREIGN COMPANY (EMPLOYER)

Nom ou raison sociale : <i>Company name:</i>	Judge Software Systems, Inc
Adresse complète à l'étranger : <i>Full address outside France</i>	4028 Via Galivan US - CA 90274 Palos Verdes Estate
Téléphone : <i>Telephone:</i>	1 310 850 5936
Fax ou E-mail : <i>Fax or E-mail:</i>	kjudge@judgessoftwaresystems.com

LIEN DE L'EMPLOYEUR AVEC L'ENTREPRISE/L'ÉTABLISSEMENT D'ACCUEIL DU/DES SALARIÉS
EMPLOYER(S) LINKS WITH THE COMPANY/ESTABLISHMENT RECEIVING THE EMPLOYEE(S)

L'entreprise est supportée par un Membre de l'Association "ETSI".
The Company is supported by a Member of the "ETSI" Institute

MISSION MISSION

Objet : <i>Object:</i>	Interoperability and Integration of Global Navigation Satellite Systems (GNSS) with Telecommunications Systems for the provision of location-based services	
Durée prévisible : <i>Forecast duration:</i>	Du (from) 17 February 2014 au (to) 31 January 2016	
Lieu(x) d'emploi : <i>Place(s) of employment:</i>	ETSI 650 route des Lucioles F-06921 Sophia Antipolis France	Sessions à temps partiel, selon besoin du projet <i>Part-time sessions, according to project requirements</i>

Fait à

le
Date

Signature et cachet de l'entreprise
Employer's signature and stamp

(1) Le formulaire de déclaration préalable doit être transmis à l'Inspecteur du Travail **avant le début de la prestation**. ETSI se chargera d'effectuer les démarches nécessaires, sur la base des informations fournies dans cette annexe par l'employeur. L'employeur est responsable de la véracité des informations fournies.

(1) *This declaration must be sent to the French Administration **before the start of the work**. ETSI will take care to transmit the declaration as appropriate, on the basis of the information provided by the employer. The employer is responsible for the accuracy of the information provided.*

ANNEXE 1
(Appendix 1)
LISTE DES SALARIÉS DÉTACHÉS
List of posted workers

À remplir par l'entreprise étrangère (employeur)

To be filled by the employer

Article R. 1263-3 du code du travail

Article R. 1263-3 of Labour Code

L'employeur doit préciser l'identité de tout salarié qu'il souhaite détacher en France; qu'ils soient ressortissants de l'Union Européenne ou d'un État tiers. (1)

Employers must specify the identities of all employees they wish to send to France, whether nationals of the European Union or of a non-Member State. (1)

Nom : <i>Last name:</i>	Judge
Prénom : <i>First name:</i>	Kevin
Date de naissance : <i>Date of birth:</i>	
Nationalité : <i>Nationality:</i>	
Date de conclusion du contrat de travail : <i>Date of signature of work contract:</i>	
Date de fin du contrat de travail : <i>Date of conclusion of work contract:</i>	
Type de contrat de travail : <i>Type of work contract:</i>	
Qualification professionnelle : <i>Professional qualification:</i>	
Emploi occupé en France : <i>Post occupied in France:</i>	Contribution à temps partiel comme Ingénieur expert en Télécommunications au sein d'une équipe projet de l'ETSI. <i>Part-time contribution as Telecommunications Engineer expert in ETSI STF project.</i>
Rémunération brute mensuelle en France : <i>Gross monthly salary in France:</i>	

Fait à

le
Date

Signature et cachet de l'entreprise
Employer's signature and stamp

(1) Le fait, pour un employeur, de ne pas préciser à l'Inspecteur du Travail la déclaration préalable est puni de l'amende prévue pour les contraventions de troisième classe.

(1) Non-presentation of the prior declaration by the employer to the Work Inspector is punishable by the fine provided for in case of third-class contraventions.

Annex 4 Support from an ETSI Member

ANNEX B

Candidature for Specialist Task Force YK (ETSI/SES SCN) on Interoperability and Integration of Global Navigation Satellite Systems (GNSS) with Telecommunications Systems for the provision of location-based services (C.L. 13_3071 of 5 November 2013)

Please send to STFcand@etsi.org, together with the CV of the candidate, before **12 January 2014**

ETSI Member proposing the candidature: THALES

Person proposing the candidature: Mr. Michel Monnerat

Role *: Head of Service

e-mail: michel.monnerat@thalesalieniaspace.com

Candidate: Mr Kevin Judge

e-mail: kjudge@judgessoftwaresystems.com

Nationality: USA

Mobile phone: +1 310 850 5936

Candidate Company name (contractor to ETSI): Judge Software Systems, Inc.

Availability of the candidate for the duration of this project (see ToR): 100 days of the 280 (~ 1/3 time). No specific constraints. Unavailable for 1 week 2 or 3 times a year for family vacations.

Availability to work in ETSI premises: Governed by the travel budget. Mr Judge is available to travel for this project, but as the travel budget is small, Mr Judge's time spent in ETSI premises may be limited.

Specific qualification of the candidate in relation with this project:

Mr Judge is an expert in GNSS. He has been designing navigation algorithms and software for GNSS navigation systems since the early days of GPS. he has designed core navigation algorithms for standard and precise kinematic systems. he also has experience with radio communication and protocols as he developed a proprietary wireless data network consisting of the base station transceivers as well as the mobile transceivers. This system was also designed with GPS location in mind and a protocol was designed to efficiently carry location packets.

Experience in standardization areas related to this project:

Mr Judge has been involved in location standards for the past 13 years. He was the chairman for the 3GPP2 Location Services Working Group during the development of the IS-801A standard and the follow-on work to design the test standard after that.

he has been an active participant in 3GPP2 or 3GPP since that time. He has also contributed to OMA standards. He is now participating in the Indoor Location Alliance that is designing guidelines for indoor location standards. He began work in Location Standards after a long career as a scientific analyst designing GPS and GNSS software, which he continues to do today.

Motivation of the ETSI Member to propose this candidature:

In addition to 3GPP2, Mr Judge has been involved in 3GPP standards for more than 10 years. He especially contributed actively to the definition of the Assisted Galileo Standards.

The experience of Mr Judge in GNSS and standards, at a technical level but also at a business level, sounds like a real benefit for the standardisation initiative carried out at SCN level. The initiative launched at SCN level is indeed expanding and should clearly be reinforced by market needs views.

The experience of Mr Judge in chipset and solutions development domain will hence certainly offer the opportunity to give a strong market coherency to the standards, and vice versa will help disseminating the standards into market developments.

Besides, the SCN standards appear complementary to the ones developed at Indoor Location Alliance (and also OMA). It is necessary that the Task force implements the bridge between both, and make sure that there is no overlap. Mr Judge appear to be skilled for this. Finally the standards will have to be relayed in various other forums such as 3GPP. Mr Judge will clearly help disseminating them.

Remarks: