



Tender Specifications annexed to Invitation to Tender

Ref. SJU/LC/0096-CFT

VDL Mode 2 Capacity and Performance Analysis

30 September 2013

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1 INTRODUCTION

1.1 What is SESAR?

The purpose of the SJU created under Article 187 of the Treaty on the Functioning of the European Union, is to ensure the modernisation of the European air traffic management system through the coordination and concentration of all relevant research and development efforts.

The SJU is responsible for the execution of the ATM Master Plan and for carrying out specific activities aimed at the development of a new generation of air traffic management system capable of ensuring the safety and fluidity of air transport worldwide over the next thirty years. Further information on the activities of the SJU is available at www.sesarju.eu

1.2 Background to Datalink Services and Technologies

SESAR provides the wider European context for the full-scale implementation of ATM Datalink improvements identified in the European ATM Master Plan where 6 major lines of action are identified. Datalink underpins one of these major lines of action in the move towards trajectory based operations in the medium term.

In the short term the existing EUROCONTROL LINK 2000+ Programme (see www.eurocontrol.int/link2000) is an essential enabler for further SESAR improvements such as trajectory based operations (often called 4D). LINK 2000+ is co-ordinating the implementation of initial Controller Pilot Datalink Communications (CPDLC) according to the provisions the existing European Commission Legislation¹. It will deploy Datalink over the ATN and VDL M2 technology in the whole of Europe by 2015. It should be noted that EC Reg. no 29/2009 leaves the door open to new technologies other than VDL M2 provided that safety and performance requirements are met. Long haul traffic operating FANS1/A datalink services will also operate over VDL M2 in some areas of Europe.

Many of the lessons learned in LINK 2000+ deployment will help to advance the second step for Datalink, i.e. Initial 4D, which is required in the medium term. Full 4D is expected in the longer term. Initial 4D is already defined in draft international standards due to be published in 2014.

Whilst LINK 2000+ targets Datalink services in dense continental airspace, an older system (FANS1/A) was deployed in the Oceanic areas based on ACARS technology where performance requirements are less stringent. FANS1/A Datalink is installed on many long haul aircraft whilst CPDLC over ATN/VDL M2 technology is being deployed in continental Europe.

The new set of Datalink services now called ATN Build 2 (ATN B2) include Initial 4D and new airport services and aim at “Convergence” i.e. one set of Datalink services available globally; meaning that aircraft could equip once and perform Datalink anywhere.

The ICAO OPLINK Panel has been on a Datalink Harmonization strategy with the goal of realising “Convergence” in the medium term based on ATN B2 (Initial 4D with new airport services). This converged solution has been the subject of standardisation work being

¹ 1 Commission Regulation (EC) No 29/2009 of 16 January 2009 “laying down requirements on data link services for the single European sky” <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:013:0003:0019:EN:PDF>

conducted by RTCA SC214/EUROCAE WG78 and is now reaching maturity with publication expected early in 2014.

The Datalink Harmonization Strategy was recently included in the ICAO Global Air Navigation Plan (GANP) that formed the basis of the recent global Air Navigation Conference in Montreal 2012 (ANC). So the basic plan for Datalink “Convergence” is now agreed globally and is illustrated simply in Fig. 1 below. In summary, what has been adopted matches the European ATM Master Plan and the goals for SESAR deployment. Europe is expected to be the first region to implement this plan.

SESAR agreed a datalink strategy in 2012 which is consistent with this global roadmap. The ongoing use of VDL M2 in the transition towards the introduction of new technologies is critical and an accurate view of when VDL M2 will reach its performance and capacity limitations is needed.

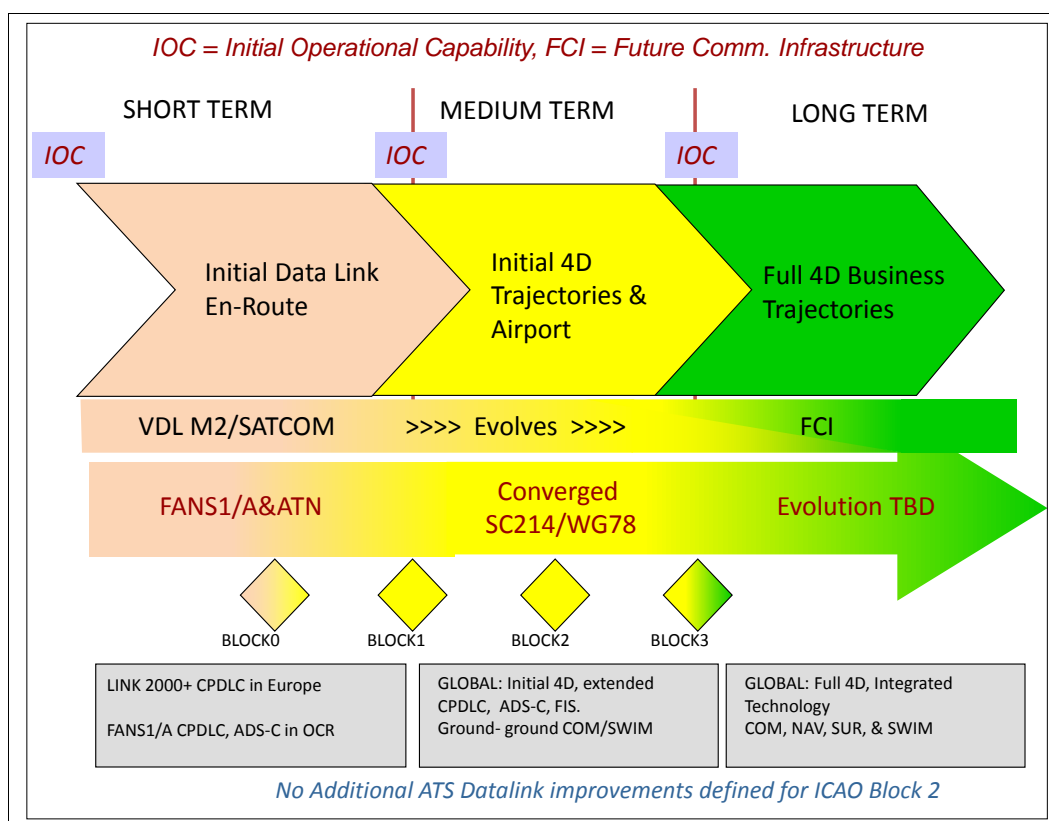


Fig. 1 – Global Datalink Convergence.

1.3 Previous Analysis

Simulation studies conducted by Eurocontrol have indicated that at least three VDL Mode 2 (VDL M2) frequencies will be required to support the anticipated communication load in the full deployment of Datalink Services by 2015 in line with EC Reg. No. 29/2009 (see [REF 1]). This estimate includes support for Airline Operational Communications (AOC).

The LINK 2000+ Programme at Eurocontrol is co-ordinating the deployment of Controller Pilot Datalink Communications (CPDLC) and is overseeing the deployment of multi-

frequency VDL M2. The VDL M2 Autotune function will be required to satisfy multi-frequency operation, and in addition a dedicated ground frequency may be implemented by some Air/Ground Communication Service Providers (ACSPs) as an initial step towards full multi-frequency VDL operation, or as a complimentary technique.

Industry standards covering both Autotune procedures and dedicated ground frequencies have been incorporated into Supplement 6 of ARINC 631 (ARINC 631-6).

1.4 Purpose

SJU is therefore launching an open call for tender aimed at concluding a direct service contract with one successful tenderer to provide VDL M2 Capacity and Performance Analysis.

Interested economic operators are invited to submit a tender, as defined in the Invitation to Tender ref. SJU/LC/096-CFT, addressing the requirements defined in section 2 below.

2 TERMS OF REFERENCE

2.1 Scope and objectives

The general scope of the study should address the capability of multi-frequency VDL M2 to support Datalink services across a number of scenarios. In particular, the analysis should determine the capability (capacity and performance) of VDL M2 to support the implementation of evolving datalink services within increasing traffic scenarios. It should demonstrate the point at which VDL M2 will no longer be able to support the anticipated services within the SESAR Concept.

The results should enable the determination of the time horizon by when the introduction of more advanced datalink services will require greater datalink capacity & performance that VDL M2 can provide.

This should address the evolution of traffic and datalink implementations.

Datalink services to be considered include:

- Existing datalink Services (including Link 2000+ ...)
- Airline Operational Communication (AOC)
- ATN Baseline 2 (including initial 4D ...)

The analysis should address as a minimum, the time period 2015 through to 2040, with 5 year intervals.

Performing the study, the selected contractor shall ascertain the effect of system loads/key parameters on typical aircraft operating in dense continental airspace. Precise simulation of all protocol state machines etc. is not necessarily required, and use of probabilistic methods (e.g. Monte Carlo) may be appropriate, subject to provision of a reasonable justification that results are expected to be representative of the real world behaviour.

The study is limited to the analysis of existing Datalink deployment (LINK 2000+), ATN B2 (the set of services being standardised within EUROCAE WG78, including i4D), FANS1/A and importantly AOC operations in Europe over VDL M2 until 2030. Since there are unknown parameters such as the number of aircraft that will be equipped at a given time various “mixed equipage” scenarios will be required.

Taking account of services, link budgets, data volumes and timing, the predicted utilisation analysis to be performed must clearly show how the evolution and take-up of services will drive utilisation and performance. As indicated, the analysis must indicate clearly when VDL M2 reaches its limitations, the consequence of reaching them and the assumptions being made.

This study shall build upon the previous work executed by Eurocontrol and in the SESAR Programme.

The study shall contain an assessment of the datalink services required to support Full 4D operations, going beyond ATN B2, although it is acknowledged that these services are still subject to R&D activities.

2.2 System and Analysis Metrics

2.2.1 Simulation tools

The Hardware Platform & Operating System availability and the Analysis Tools to be used shall be clearly defined in the technical offer, including any existing or planned validation of the tools. It is important that the tenderer provides evidence of the fact that the VDLM2 protocols and performance as defined in [REF 8], [REF 9] and [REF 9] shall be appropriately modelled.

Proposed analysis tooling shall be able to determine conformance to international standards [REF 4] [REF 5] for Safety and Performance requirements for a typical aircraft in dense continental airspace given the scenario under consideration.

2.2.2 Analysis Capability and Metrics

The Analysis tool supporting the VDLM2 Analysis **shall** include at least the capability to model and/or simulate:

- Predicted and/or user defined AOC data load, including evolution according to a time based function (scenarios representing different years).
- Predicted and/or user defined CPDLC data load from EC Reg. No. 29/2009 CPDLC implementation including evolution according to a time based function,
- Predicted and/or user defined data load for FANS1/A services 6.1 where implemented by ANSPs in Europe including evolution according to a time based function,
- Predicted and/or user defined data load for ATN B2 services (see 4.2) implementation for the following applications including evolution according to a time based function:
 - CPDLC
 - Automatic Dependent Surveillance Contracts (ADS-C)
 - Flight Information Services (FIS) and MET Services
 - As an option a predicted and/or user defined data load for future services beyond ATN B2 services.
- Airspace volume under consideration
- The density of aircraft occupying the airspace volume under consideration, in specified bands of flight levels.
- The number of VDL M2 frequencies deployed to support Datalink.
- Number of VHF Ground Stations (VGS) visible to a typical aircraft in each flight level band.
- User defined definition of the % of aircraft using other available data link technologies (eg AeroMacs in the airport environment or satellite Communication capability)
- The Aeronautical Telecommunications Network protocol suite behaviour and overhead.

Key metrics characterising the behaviour of the end-to-end link to be considered include:

- Median, 95 percentile and 99 percentile Transaction delay (TRN) [REF 4] [REF 5] for each application/service]
- Median, 95 percentile and 99 percentile Technical Communication delay (RCTP) [REF 4] [REF 5] for each application/service.
- Continuity for each application/service.
- Overall TP4 retry rate, expressed as a proportion of total TP4 PDUs transferred successfully.

2.3 Description of the tasks to be performed

2.3.1 Work breakdown structure

The work to be performed under the future contract is described within three work areas (WA1-3) in the following sections:

➤ WA1.1: Definition of Scenarios and Analysis Report Template

The work area defines the Scenarios to be executed and reports to be produced for each.

The minimum baseline scenarios shall include:

1. LINK 2000+, FANS1/A and AOC deployment for dates 2015, 2020, 2025, 2030 and in each case generate results assuming pessimistic, median and optimistic traffic growth using EUROCONTROL STATFOR forecasts.

Note: LINK 2000+ deployment according to EC Reg. No. 29/2009 is assumed to be complete in 2015 with 75% of flight equipped but the number of aircraft equipped will continue to evolve as new aircraft are built and older aircraft retire.

2. LINK 2000+, ATN B2, FANS1/A and AOC deployment for the dates 2020, 2025, 2030 and in each case generate results assuming pessimistic, median and optimistic traffic growth using EUROCONTROL STATFOR forecasts.

Note: ATN B2 deployment according is assumed to start in 2018 and to take until 2025 to complete with 75% of flights equipped, during this time there will be mixed aircraft equipage (LINK2000+, FANS1/A, ATN B2) and the number of aircraft equipped will continue to evolve as new aircraft are built and older aircraft retire.

3. LINK 2000+, ATN B2, FANS1/A, AOC and 'future services beyond ATN B2' deployment for the dates 2030, 2035, 2040 and in each case generate results assuming pessimistic, median and optimistic traffic growth using EUROCONTROL STATFOR forecasts.

For each baseline scenario the contractor shall deliver a detailed scenario description. Each scenario description report shall clearly identify the proposed Scenarios for Evaluation including the assumed ATS and AOC Datalink services and loads to be analysed and the associated performance criteria. Predicted data loads shall be derived from EUROCONTROL's STATFOR forecasts or user defined values. Actual and predicted aircraft equipage levels based on recognised data sources or user defined values.

Note: EUROCONTROL's PRISME fleet may provide useful source of aircraft data.

The scenario report shall also include a matrix summarising the datalink Services (and Combinations thereof) against Scenarios (and associated timescales).

D1.1 shall consist of the scenario reports to be provided to the SJU for approval before the execution of the simulation runs are carried out (see WA 2).

➤ WA1.2: Definition of Analysis Report Template

In parallel to the WA1.1 tasks, the selected contractor shall provide the Analysis Report Template at the same time as the scenario definitions. The template will include the outline and contents for scenario execution reports consisting of a summary of the key outputs identified in section 2.2 above.

An assessment of the number of frequencies needed to achieve the required performance levels for the various services and the capacity margins by which the required performance levels are met for a given scenario are a key output.

Graphical presentation of results, including histograms illustrating statistical distribution of TRN and RCTP delays shall be proposed.

D1.2 shall consist of the Analysis Report Template to be provided to the SJU for approval before the execution of the simulation runs are carried out (see WA 2).

➤ **WA2: Scenario Analysis Runs and Reports**

This work area consists of the execution of the scenario analysis runs and the production of the Scenario Analysis Reports.

The factors for analysis and key metrics presented in Section 2.2 shall be addressed in this WA.

Several deliverables (D2.1 – D2.X) which will consist of Simulation Run Reports for the set of agreed scenarios. This may be delivered as a single report containing all scenario results or as separate reports for each defined scenario.

➤ **WA3: Final Report**

This work area shall result in the production of a final synthesis report bringing together the analysis of the various scenarios that have been undertaken in WA 2, and in particular shall contain

- a focussed analysis of the full set of scenarios results
- recommendations for the way forward, including predicted timeline for the VDL/2 'breaking point' and the need for a next generation datalink system.
- reference to the key metrics presented in Section 2.2 shall be made.

D3 shall consist of the Final Report.

2.3.2 Milestones and Deliverables

The tenderer shall address the following schedule of review milestones and summary of deliverables when preparing a tender since this will be the estimated planning for the performance of the contract. Adjustments to it might be agreed on the kick off meeting.

<i>ID</i>	<i>Milestone Description</i>	<i>Due date</i>
M0	Project Plan Review	$T_0^* + 1$ month
M1	Review of Detailed specification of the Baseline Scenarios and Simulation report template	$T_0 + 3$ months
M2	Delivery of first Simulation Run report with results from the execution of the baseline scenarios.	$T_0 + 6$ months
M3	Final Report Delivery	$T_0 + 9$ months.

The following deliverables will be provided:

ID	Deliverables Description	Due date
D0	Detailed Project Plan	$T_0 + 1$ month
D1.1	Detailed specification of the Baseline Scenarios	$T_0 + 3$ months.
D1.2	Simulation Results template	$T_0 + 3$ months.
D2.1	Simulation Run 1 report	$T_0 + 6$ months.
D2.X	Simulation Run X report**	$T_0 + 8$ months.
D3	Final Report	$T_0 + 9$ months.

* T_0 . Date of the Kick off meeting

** Depending on how many scenarios are defined and whether multiple scenario results are included within a single deliverable.

The Deliverables shall be provided to the SJU in MS Word format or compatible software. All deliverables should be structure with, at least, a clear Executive Summary, the analysis conclusions and recommendations. These shall include a disclaimer in accordance with Article II.10 of the draft contract, where applicable.

2.4 Acceptance of the deliverables

Notwithstanding the provisions of section 2.5 below, the SJU reserves the right for deliverables to be reviewed by the SESAR project partners and external experts during the milestone deliverable progress and deliverable reviews presented in the section 2.3.2 above.

Acceptance of the deliverables by the SJU will be performed after the respective Final Deliverable Review milestone within one month after the reception of the relevant deliverables. In cases of need to update or rejection of the deliverables, a report justifying the reasons will be provided to the selected contractor. The contractor will have seven calendar days in which to submit additional information or corrections as set forth in Article I.4 of the draft contract.

2.5 Intellectual Property Rights

The tenderer selected for award of the contract will be subject to the IPR provisions of the contract the draft of which is annexed to Invitation to tender ref. SJU/LC/096-CFT, i.e. Articles I.8 and II.10 thereof.

In addition, it should be noted that, if the activity results (please, refer to the draft contract for the definition of the “results”) are not to be fully created for the purpose of the contract it should be clearly pointed out in the tender. There should be information provided about the scope of pre-existing materials, their source and when and how rights to them have been acquired.

In the tender all quotations or information originating from other sources and to which third parties may claim rights have to be clearly marked (source publication including date and place, creator, number, full title etc.) in a way allowing easy identification.

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2.6 Place of performance

The activities will be performed at the contractor's premises.

Where necessary, progress and deliverable review meetings between the contractor and the SJU shall be held at SJU's premises in Brussels unless agreed otherwise.

2.7 Variants

Variants on the terms of reference of this call for tenders are not permitted.

2.8 Value

The maximum overall value allowed for the service contract is 300 000EUR.

3 ASSESSMENT OF THE TENDERS AND AWARD OF THE CONTRACT

3.1 Introduction

The assessment will be strictly based on the content of the received tenders and in the light of the criteria set out hereunder.

The assessment procedure will be carried out in three consecutive stages:

- Stage 1 – assessment in the light of exclusion criteria (see section 3.2. below),
- Stage 2 – assessment in the light of selection criteria (see section 3.3 below) and
- Stage 3 – assessment in the light of award criteria (see section 3.4below).

The aim of each of these stages is:

- To check on the basis of the exclusion criteria, whether the tenderer can take part in the procurement procedure;
- To check on the basis of the selection criteria whether the tender has the necessary legal, economic and financial, technical and professional capacity for the performance of the contract;
- To assess on the basis of the award criteria each tender which has passed the exclusion and selection stages.

3.2 Assessment in the light of exclusion criteria

In order not to be excluded from participation in the present procedure, the tenderer (the coordinator and each consortium member) shall provide evidence of not being in any of the following situations:

- a) is not bankrupt or being wound up, is not having its affairs administered by the courts, has not entered into an arrangement with creditors, has not suspended business activities, is not the subject of proceedings concerning those matters, and is not in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- b) has not been convicted of an offence concerning professional conduct by a judgment which has the force of *res judicata*;
- c) has not been guilty of grave professional misconduct proven by any means which the contracting authorities can justify;
- d) has fulfilled all its obligations relating to the payment of social security contributions and the payment of taxes in accordance with the legal provisions of the country in which it is established, with those of the country of the contracting authority and those of the country where the contract is to be carried out;
- e) has not been the subject of a judgement which has the force of *res judicata* for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the SJU/Union's financial interests;
- f) is not a subject of the administrative penalty for being guilty of misrepresentation in supplying the information required by the contracting authority as a condition of participation in the procurement procedure or failing to supply an information, or being declared to be in serious breach of his obligation under contract covered by the EU budget.

Evidence to be provided

1. Accordingly, tenderers [the coordinator and each consortium member] must provide a **Declaration on honour** (see Annexe I), duly signed and dated, stating that they are not in one of the situations referred to above².

Nota Bene:

Only the tenderer (the coordinator and each consortium member) to which the contract is to be awarded shall provide, within 15 calendar days following notification of award and preceding the signature of the contract, the following documentary proofs (**originals**) to confirm the declaration referred to above:

2. For situations described in (a), (b) and (e), production of a recent³ **extract from the judicial record** is required or, failing that, a recent equivalent document issued by a judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied. Where the tenderer is a legal person and the national legislation of the country in which the tenderer is established does not allow the provision of such documents for legal persons, the documents should be provided for natural persons, such as the company directors or any person with powers of representation, decision making or control in relation to the tenderer.
3. For the situation described in point (d) above, recent⁴ **certificates or letters issued by the competent authorities of the State concerned** are required. These documents must provide evidence covering all taxes and social security contributions for which the Tenderer is liable, including for example, VAT, income tax (natural persons only), company tax (legal persons only) and social security contributions.⁵
4. For any of the situations (a), (b), (d) or (e), where *any* document described in two paragraphs above is *not issued* in the country concerned, *it* may be replaced by a sworn or, failing that, a solemn statement made by the interested party before a judicial or administrative authority, a notary or a qualified professional body in his country of origin or provenance.

The SJU may waive the obligation of a tenderer to submit the documentary evidence referred to above if such evidence has already been submitted to the SJU for the purposes of another procurement procedure and provided that the documents are not more than one year old starting from their issuing date and that they are still valid. In such a case, the tenderer shall declare on his honour that the documentary evidence has already been provided in a previous procurement procedure and confirm that no changes in his situation have occurred.

Please refer to the following web page for additional information regarding the relevant requirements and model documents under national laws of the EU Member States:

² Where parts of the services are intended to be subcontracted the tenderer has also to ensure that the subcontractors satisfy the exclusion criteria as indicated in section 15 of invitation to tender Ref. SJU/LC/0093-CFT. Where a consortium is submitting a tender, each member of consortium must provide the required Declaration on honour as indicated in section 16 of the mentioned invitation.

³ Not older than one year.

⁴ Not older than one year.

⁵ Tenderers are strongly advised to explore the sources in their respective national legal systems for acquiring the required supporting documentation and the related deadlines, already at the stage of the preparation and submission of their offers, in order to avoid any delays in providing the documents in case selected for award of the contract.

http://ec.europa.eu/internal_market/publicprocurement/e-procurement/e-certis/index_en.htm.

3.3 Assessment in the light of selection criteria

The tenderer must have the overall capabilities (legal, economic, financial, technical and professional) to perform the contract. All the requirements listed below must be met in order to enter the next phase of the assessment in the light of award criteria.

The SJU may waive the obligation for a candidate or tenderer to submit the documentary evidence requested under Sections 3.3.1, 3.3.2 and 3.3.3 below if such evidence has already been submitted for another procedure and provided the documents were issued not more than one year earlier and are still valid. In such cases, the candidate or tenderer must declare on his honour that the documentary evidence has already been provided in a previous procedure with the SJU, provide reference to that procedure, and confirm that there has been no change in the situation. The abovementioned information must be included in the tender specifications.

Please note that in the selection phase, assessment focuses on the past experience and capacity of the tenderer, and not on the quality of the (technical) offer. The latter is to be assessed in the light of the award criteria.

3.3.1 Legal capacity

Tenderers [and in case of consortium, the coordinator and each consortium member] are requested to prove that they are authorised to perform the contract under the national law.

Evidence to be provided:

1. The tenderer [and in case of consortium, the coordinator and each consortium member] shall provide a dully filled in and signed Legal entities' form (see section 7 b) of the Invitation to tender Ref. SJU/LC/0096-CFT).
2. Evidenced of inclusion in a trade or professional register, or a sworn declaration or certificate, membership of a specific organisation, express authorisation or entry in the VAT register.

3.3.2 Economic and financial capacity

Evidence to be provided:

The tenderer [the coordinator and each consortium member] shall present the following documentation:

1. Evidence of professional risk indemnity insurance; *and*
2. Balance sheets (or extracts from balance sheets) for at least the last two years for which accounts have been closed; *or*
3. Statement of overall turnover during the last three financial years; *and*
4. If the tenderer relies on the capacity of other entities (i.e. consortium members), a written undertaking (e.g. letter of intent) on the part of those entities confirming that they will place the resources necessary for performance of the contract at the tenderer's disposal, shall be provided (see section 18bis of the invitation to tender Ref. SJU/LC/0096-CFT).

If, for some exceptional reason which the SJU considers justified, the tenderer (the coordinator and each consortium member) is (are) unable to provide the references requested here above, the tenderer (the coordinator and each consortium member) may prove the economic and financial capacity by any other means which the SJU considers appropriate.

Nota bene: Public bodies and higher education establishments are not subject to a verification of their economic and financial capacity.

3.3.3 Technical and professional capacity

Tenderers (and in case of a Consortium, the Consortium as such) are required to prove sufficient technical and professional capacity to perform the contract. To that end, those not complying with the following will not go to the subsequent assessment stage:

Minimum requirements:

- The project manager who will be the interlocutor with SESAR must have at least 5 years of relevant experience;
- Team members should have relevant work experience in ATM Performance-related analysis on similar subjects with a decisive impact on the decision making process
- Capacity of the tenderer to undertake ATM Performance-related analysis on the subject with a decisive impact on the decision making process,

Evidence to be provided:

- a brief presentation of the structure of the organisation, focusing in particular on the research capacity and the organizational structure set up to perform the activity,
- a presentation of the main current and other relevant activities of the tenderer,
- detailed CVs of the team member that will be responsible for carrying out the tasks,
- list of projects and activities performed in the relevant field(s) within the last 5 years.

3.4 Assessment in the light of award criteria

Only the tenders meeting the requirements of the exclusion and selection criteria will be evaluated in terms of quality and price for the award of the contract.

The contract will be awarded on the basis of the economically most advantageous tender on the basis of the following evaluations:

3.4.1 Technical evaluation

The quality of each technical offer will be evaluated in accordance with the award criteria and the associated weighting detailed in the table below:

N°	Award criteria		Maximum Score	Minimum score for compliance
1	Project management and added value for the SESAR JU: <ul style="list-style-type: none">• Overall quality, identification and proposed mitigation of risks.• Planning of the proposal, including consortium organization, proposed team, and balance of skills		15	8
2	Quality and relevance of methodology: <ul style="list-style-type: none">• Understanding of the sector and the requirements (section 2)• Adequacy and relevance of the proposed tools and techniques• Quality and relevance of the proposed approach to satisfy the requirements (section 2)	Modelling Tools and Analysis Capability (See section 2.2)	25	13
		Proposed approach to WA (See section 2.3)	60	33
	Total score for technical compliance		100	

3.4.2 Financial evaluation

Only tenders whose award evaluation gives them a score of at least the minimum score in each of the main criteria above and a total of at least 70 points may be subject to a financial evaluation and be recommended for the award of the contract. For lower scores the offers will be considered non-suitable and excluded.

The price to be taken into account for the financial evaluation and for the award of the contract is the one proposed by the tenderer in the financial offer as indicated in the Invitation to tender ref. SJU/LC/096-CFT.

3.4.3 Recommendation for award

The Contract will be awarded to the Tenderer offering the highest ratio quality/price by applying the following formula:

$\text{Ratio Quality/Price} = (\text{Total quality score of Offer Y} / \text{Highest quality score}) \times 60\% + (\text{Lowest price} / \text{Price of Offer Y}) \times 40\%$

4 APPENDIX: REFERENCES AND ACRONYMS

4.1 References

- [REF 1]. VDL Mode 2 Capacity Analysis Through Simulation Wp5 - Simulation Results For Initial Link 2000+ Deployment - CCS-VDL2-CAP-07D5 Edition 4.0
- [REF 2]. AOC Datalink Dimensioning (source SESAR), Nov 16th, 2010, Edition 01
- [REF 3]. EC Reg. No. 29/3009 – The Datalink Services Implementing Rule
- [REF 4]. RTCA SC-214/EUROCAE WG-78 PU-10 – Data Communications Safety and Performance Requirements Version J
- [REF 5]. EUROCAE Document ED-120 / RTCA DO-290 - Safety and Performance Requirements Standard for Air Traffic Data Link Services In Continental Airspace (SPR IC), May 2004, including Change 1 (April 2007) and Change 2 (October 2007)
- [REF 6]. EUROCONTROL-SPEC-0116 V 2.1 EUROCONTROL January 2009
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4.2 Acronyms

Acronym	Full text
ACARS	Aircraft Communications Addressing and Reporting System
ACSP	Air/Ground Communication Service Providers
ADS-C	Automatic Dependent Surveillance - Contract
ANC	Air Navigation Conference in Montreal 2012
ANSP	Air Navigation Service Provider
ARINC	Aeronautical Radio, Incorporated
ATC	Air Traffic Control
ATM	Air Traffic Management
ATN	Aeronautical Telecommunications Network
CPDLC	Controller Pilot Data Link Communications

EASA	European Aviation Safety Agency
EUROCONTROL	European Organization for the Safety of Air Navigation
ED	EUROCAE Document
EUROCAE	European Organisation for Civil Aviation Equipment
FAA	Federal Aviation Administration
FANS	Future Air Navigation System.
FCI	Future Communications Infrastructure
FIS	Flight Information Service
GANP	Global Air Navigation Plan
ICAO	International Civil Aviation Organisation
IOC	Initial Operational Capability
IPR	Intellectual Property Rights
MOPS	Minimum Operational Performance Specification
OCR	Oceanic Control Region
R&D	Research and Development
RTCA	Radio Technical Commission for Aeronautics
SARPs	Standards And Recommended Practices
SESAR	Single European Sky ATM Research Programme
SJU	SESAR Joint Undertaking (European Union body under Council Regulation (EC) No 219/2007 as amended by Council Regulation (EC) No 1361/2008)
SOW	Statement of Work
ST	Sub-Task
SWIM	System Wide Information Management
TRN	Transaction Delay
VDLM2	VHF Digital Link Mode 2
VHF	Very High Frequency
WA	Work Area
WG	Working Group

5 ANNEXES

5.1 Annex I – Declaration of Honour

DECLARATION OF HONOUR WITH RESPECT TO THE EXCLUSION CRITERIA AND ABSENCE OF CONFLICT OF INTEREST

(Complete or delete the parts in grey italics in parentheses)

[Choose options for parts in grey between square brackets]

The undersigned *(insert name of the signatory of this form)*:

☐ in [his][her] own name *(for a natural person)*

or

☐ representing the following legal person: *(only if the economic operator is a legal person)*

full official name:

official legal form:

full official address:

VAT registration number:

➤ declares that [the above-mentioned legal person][he][she] is not in one of the following situations:

- a) is bankrupt or being wound up, is having its affairs administered by the courts, has entered into an arrangement with creditors, has suspended business activities, is the subject of proceedings concerning those matters, or is in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- b) has been convicted of an offence concerning professional conduct by a judgment of a competent authority of a Member State which has the force of *res judicata*;
- c) has been guilty of grave professional misconduct proven by any means which the contracting authorities can justify including by decisions of the European Investment Bank and international organisations;
- d) is not in compliance with all its obligations relating to the payment of social security contributions and the payment of taxes in accordance with the legal provisions of the country in which it is established, with those of the country of the contracting authority and those of the country where the contract is to be performed;
- e) has been the subject of a judgement which has the force of *res judicata* for fraud, corruption, involvement in a criminal organisation, money laundering or any other illegal activity, where such activity is detrimental to the Union's financial interests;
- f) is subject to an administrative penalty for being guilty of misrepresenting the information required by the contracting authority as a condition of participation in a grant award procedure or another procurement procedure or failing to supply this

information, or having been declared to be in serious breach of its obligations under contracts or grants covered by the Union's budget.

- (Only for legal persons other than Member States and local authorities, otherwise delete) declares that the natural persons with power of representation, decision-making or control⁶ over the above-mentioned legal entity are not in the situations referred to in b) and e) above;
- declares that [the above-mentioned legal person][he][she]:
 - g) has no conflict of interest in connection with the contract; a conflict of interest could arise in particular as a result of economic interests, political or national affinity, family, emotional life or any other shared interest;
 - h) will inform the contracting authority, without delay, of any situation considered a conflict of interest or which could give rise to a conflict of interest;
 - i) has not granted and will not grant, has not sought and will not seek, has not attempted and will not attempt to obtain, and has not accepted and will not accept any advantage, financial or in kind, to or from any party whatsoever, where such advantage constitutes an illegal practice or involves corruption, either directly or indirectly, inasmuch as it is an incentive or reward relating to award of the contract;
 - j) provided accurate, sincere and complete information to the contracting authority within the context of this procurement procedure ;
- acknowledges that [the above-mentioned legal person][he][she] may be subject to administrative and financial penalties⁷ if any of the declarations or information provided prove to be false.

In case of award of contract, the following evidence shall be provided upon request and within the time limit set by the contracting authority:

For situations described in (a), (b) and (e), production of a recent extract from the judicial record is required or, failing that, a recent equivalent document issued by a judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied. Where the tenderer is a legal person and the national legislation of the country in which the tenderer is established does not allow the provision of such documents for legal persons, the documents should be provided for natural persons, such as the company directors or any person with powers of representation, decision making or control in relation to the tenderer.

For the situation described in point (d) above, recent certificates or letters issued by the competent authorities of the State concerned are required. These documents must provide evidence covering all taxes and social security contributions for which the tenderer is liable, including for example, VAT, income tax (natural persons only), company tax (legal persons only) and social security contributions.

For any of the situations (a), (b), (d) or (e), where any document described in two paragraphs above is not issued in the country concerned, it may be replaced by a sworn or, failing that, a solemn statement made by the interested party before a judicial or

⁶ This covers the company directors, members of the management or supervisory bodies, and cases where one natural person holds a majority of shares.

⁷ As provided for in Article 109 of the Financial Regulation (EU, Euratom) 966/2012 and Article 145 of the Rules of Application of the Financial Regulation

administrative authority, a notary or a qualified professional body in his country of origin or provenance.

If the tenderer is a legal person, information on the natural persons with power of representation, decision making or control over the legal person shall be provided only upon request by the contracting authority.

Full name

Date

Signature
