



**SUMMARY OF RESPONSES (SOR)
DOCUMENT FOR THE**

***REGULATORY APPROACH ON SURVEILLANCE
PERFORMANCE AND INTEROPERABILITY
REQUIREMENTS***

Formal Consultation 2 April – 4 June 2007

DOCUMENT CONTROL

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1. INTRODUCTION

1.1 GENERAL

The European Commission has delivered a Mandate to EUROCONTROL requesting assistance in the development of implementing rules on Surveillance Performance and Interoperability Requirements (SPI) for the Single European Sky (SES).

In accordance with the Initial Plan agreed by the Commission and the EUROCONTROL Agency, the first step of the development of the draft implementing rule on SPI was the production of the Regulatory Approach.

The draft Regulatory Approach for Surveillance Performance and Interoperability (SPI) requirements was circulated for formal consultation from 2 April to 4 June 2007 using the mechanisms of the EUROCONTROL Notice of Proposed Rule-Making (ENPRM) process.

1.2 SCOPE OF CONSULTATION

The SPI Consultation package consisted of the draft Regulatory Approach for Surveillance Performance and Interoperability requirements, version 0.7. It was sent to:

- Civil and Military regulatory authorities and key ATS providers of each EUROCONTROL Member State;
- Regulatory authorities of States observers at the Provisional Council;
- EC, ECAC, FAA, ICAO, JAA, NATO;
- International Organisations/Associations:
ACI, AEA, AECMA, ATCEUC, CANSO, EBAA, ECA, ERA, ETWF, IACA, IAOPA, IATA, IFALPA, IFATCA, IFATSEA
- Chairmen of the following bodies:
 - ANSB (copy Secretary of ANSB);
 - CMIC (copy Director of DMAC);
 - PRC (copy Head of PRU);
 - SRC (copy Head of SRU);

The documentation was also made available through existing working arrangements i.e. domain Teams and Steering Groups, and to members of the public via the ENPRM web site.

1.3 PURPOSE AND STRUCTURE OF DOCUMENT

Within the Single European Sky framework, the European Commission has sent to EUROCONTROL a request for the development of an interoperability implementing rule on Surveillance Performance and Interoperability requirements.

In accordance with the Initial Plan, agreed by the Commission and the EUROCONTROL Agency, the first step in the development of the draft implementing rule on SPI is the production of the Regulatory Approach.

The key objectives of the Regulatory Approach document are:

- The identification of the regulatory coverage in terms of subjects for prescription corresponding to the specific issues identified in the European Commission mandate

- The definition of three alternatives to address the regulatory coverage, alternatives that may be followed for the development of the implementing rule
- The selection of a preferred alternative on the basis of a preliminary impact assessment

The Regulatory Approach on SPI thus indicates the heading lines for the drafting of the implementing rule.

The purpose of the formal consultation on the draft Regulatory Approach on SPI was to collect views and feedback from the ATM community on the document in general and in particular on the regulatory coverage defining the content of the future implementing rule as well as on the preference for one of the options proposed for the development of the implementing rule.

The purpose of the Summary of Responses (SOR) document is to provide a consolidation of the main comments with positions of the EUROCONTROL drafting team.

The responses section (Section 2) of the document is structured as follows:

- A first part addressing the responses relative to the choice of the proposed options as well as the associated comments
- The second part concerning the specific comments made on particular sections of the proposed document

The Regulatory Approach on SPI will be updated in accordance with the outcomes of this formal consultation before being submitted to the EC.

2. OUTCOME OF FORMAL CONSULTATION

2.1 INTRODUCTION

The consultation triggered comments from some 38 Stakeholders. They were invited to express their preference for one of the options proposed in the draft Regulatory Approach as the basis for the development of the draft implementing rule and associated material as well as to make any other comment on the proposed draft Regulatory Approach.

The scope and depth of the input received provided a very useful feedback, with responses received from air navigation service providers, civil and military authorities, airspace users, industry as well as from professional associations.

In terms of options, the draft Regulatory Approach proposes an increasing regulatory coverage, starting from the harmonisation and the consolidation of the current practices and leading up to the support for the foreseen surveillance technologies and the deployment of new functionalities:

- Option 1 – it mostly harmonizes and consolidates the current best practices by putting them in a clear regulatory framework.
- Option 2 - not only consolidates and formalizes the current best practices (as option 1) but also supports the MSI implementing rule, facilitates the introduction of Mode S elementary surveillance in the SES airspace. In addition, mandatory carriage of Mode S transponders will facilitate the future deployment of Wide Area Multilateration (WAM).
- Option 3 – builds on option 2, facilitating the introduction of Mode S elementary surveillance in the SES airspace but it also allows for new technologies/functionalities (e.g. EHS, ADS-B out) to be deployed based on common needs/criteria.

Among the proposed options it was considered that Option 3 brings the greatest overall benefit by allowing the interoperability with the current and developing surveillance technologies and by allowing the introduction of new functionalities in the SES airspace based on harmonised criteria. Therefore this option was recommended by the draft Regulatory Approach as the option to be followed for the further development of the draft implementing rule and associated material.

2.2 PREFERENCE FOR THE PROPOSED OPTIONS

2.2.1 Results and generic comments

A very good level of support (more than 73% of the responses) was received for the option recommended by EUROCONTROL (option 3) as the option that will allow the interoperability of the airborne equipment with all the current and developing surveillance technologies. Among the responses that were not explicitly in favour of option 3, several positions were nuanced pointing towards an intermediate option between 2 and 3 or indicating a possible support for option 3, subject to the acceptance by the operators and longer implementation dates for ADS-B and in general subject to a better visibility of the requirements derived from this option, that are intended to be included in the rule. The responses received from the aircraft operators indicated a full support for option 3 provided the standardisation, certification and implementation requirements applicable to the ground systems are identified.

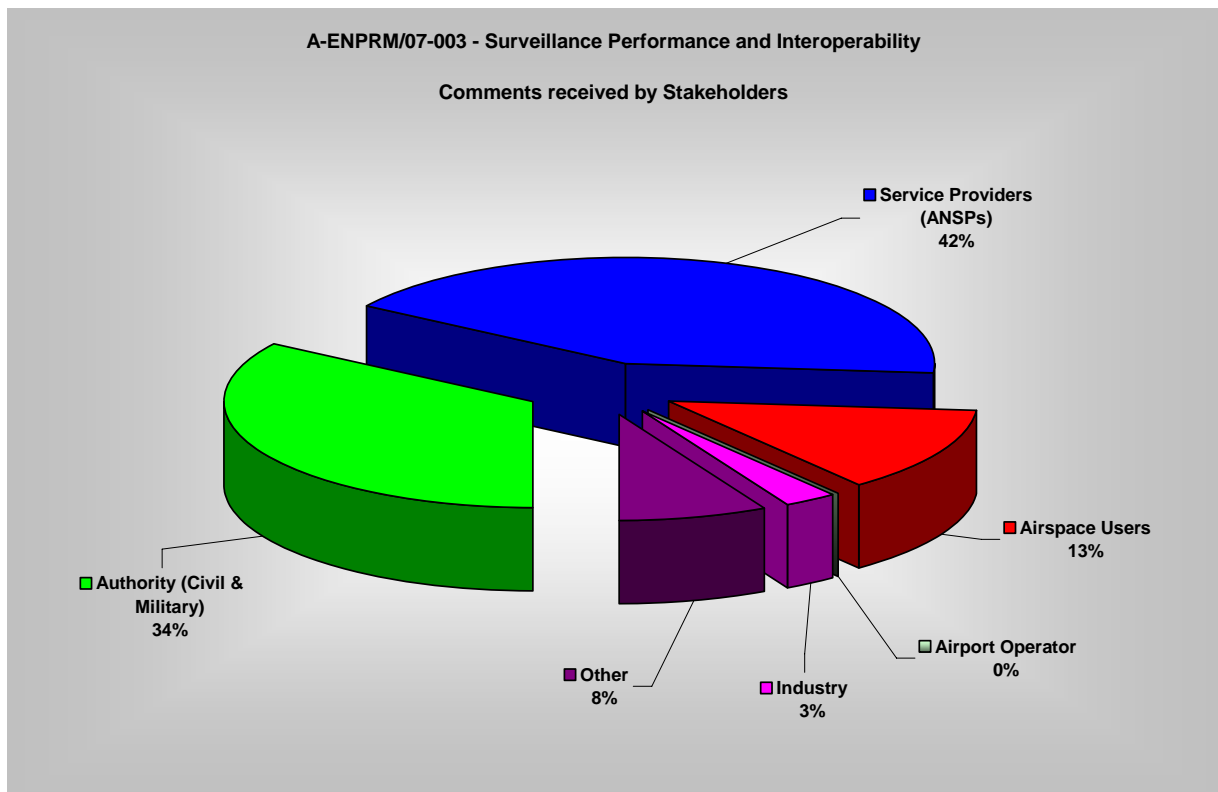
The number of responses from each category of Stakeholder is shown in the table below:

**A-ENPRM/07-003 - Surveillance Performance and Interoperability Requirements
Comments received by Stakeholders**

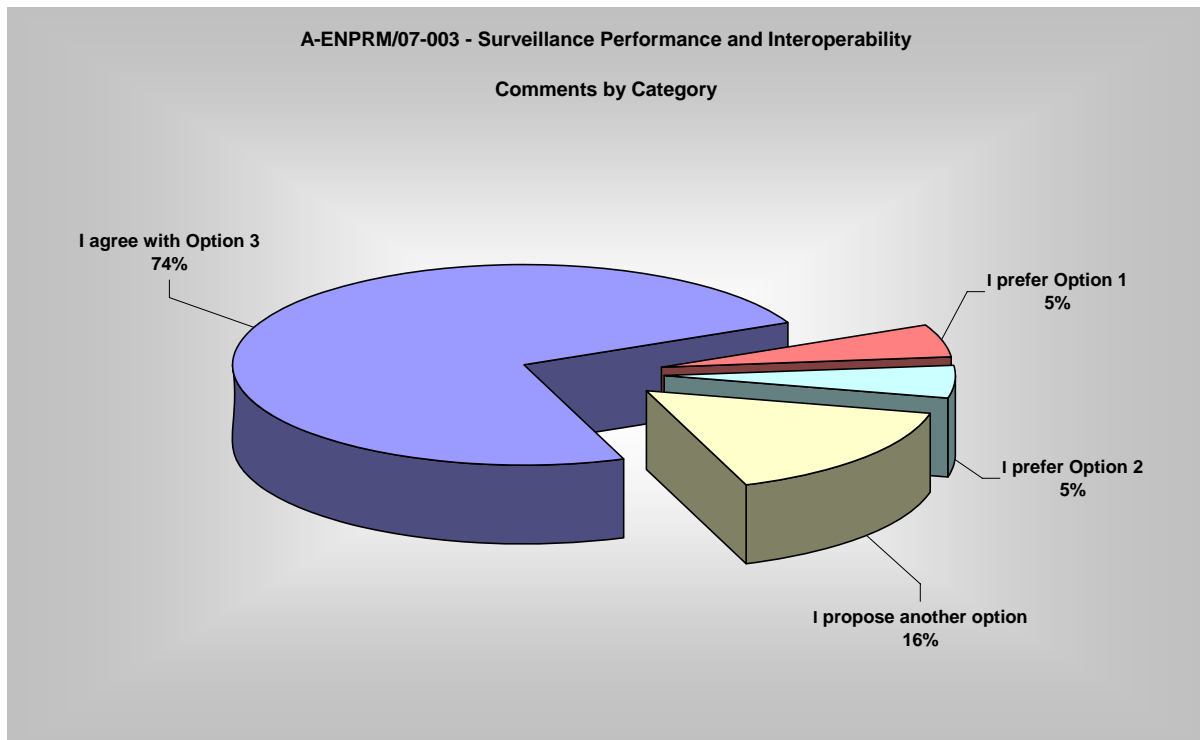
	I agree with Option 3	I prefer Option 1	I prefer Option 2	I propose another option	Total by Stakeholder	%
Authority (Civil & Military)	10	0	1	2	13	34,2%
Service Providers (ANSPs)	11	2	1	2	16	42,1%
Airspace Users	5	0	0	0	5	13,2%
Airport Operator	0	0	0	0	0	0,0%
Industry	1	0	0	0	1	2,6%
Other	1	0	0	2	3	7,9%

Total Received Comments by Category	28	2	2	6	38	100%
Percentage (%)	73,7%	5,3%	5,3%	15,8%	100%	

The distribution of stakeholders that have submitted comments during the consultation period is indicated in the following chart:



The preference for the proposed options was as follows:



2.3 SPECIFIC COMMENTS

2.3.1 Introduction

This section summarises the main comments arising from the Consultation and provides responses. When multiple comments have addressed the same subject, they were summarised and a common response is provided. Other comments, including those of a supportive nature, those correcting minor spelling errors and/or those generic comments not requiring a response have not been included for the sake of brevity. However, all submitted comments as well as the name of the organisations associated with the comments are included in the table at Annex B. It should also be noted that the comments proposing improvements and/or clarifications to the text were considered, as appropriate, in the revised version of the Regulatory Approach.

2.3.2 Comments and Responses

2.3.2.1 Impact Assessment

Comment

The impact assessment and the CBA are too high level. During the work on the development of the draft IR, the (financial) impact on the stakeholders should be addressed in much more details.

Response and Action

The draft RA presents only a very preliminary impact assessment that needs to be further developed in the drafting phase. A more detailed impact assessment in the form of a "Justification material" will be developed as part of the final report, once the content of the implementing rule will be more mature.

2.3.2.2 Added value of the implementing rule

Comment

It was felt that the added value of the implementing rule (or of some of its requirements – e.g. the carriage of ELS/EHS being already a reality) should be better explained.

Response and Action

The implementing rule is needed in order to supplement and refine the essential requirements as well as to harmonize the design, deployment and the operation of surveillance systems within the entire EATMN. It is based on the best practices already in place in some states and intends to put these practices in a regulatory framework applicable to the entire SES area.

The carriage of ELS/EHS “mandates” are applicable only to the 7 participating States. The scope of the draft implementing rule is much larger (EU Member States and the States having signed aviation agreements with the EC) therefore the propose option for the carriage of ELS would not only put the requirement in a clear regulatory framework but would also enlarge the area of applicability from the 7 States to the whole EATMN.

2.3.2.3 Harmonisation with other regions

Comment

It was felt that the draft implementing rule should take into account the developments in the surveillance area in other regions of the world (US, Australia, etc) in order to ensure global interoperability.

Response and Action

Since the beginning of the work on SPI mandate, early contacts have already been taken with notably the FAA. Proper coordination with stakeholders outside the SES area is planned to take place also in subsequent phases of the work in order to facilitate coherent and harmonized carriage requirements as well as coordinated implementation dates/conditions ensuring so global world-wide interoperability.

2.3.2.4 Availability of ground services/applications

Comment

More clear requirements relative to the deployment and use of surveillance infrastructure/applications should be put on the service providers, in order to justify the aircraft equipage.

Response and Action

During the development of the draft implementing rule it is intended to address the possibility to link the obligation to equip the aircraft with specific equipment to the obligation for the service providers to provide services using the capabilities of the equipment made mandatory.

2.3.2.5 ADS-B requirements

Comment

Applicability and requirements for ADS-B need further clarification and detail.

Response and Action

As described in option 3, the intention is to mandate the carriage of Mode S ELS transponders having the SI and 1090ES capabilities as the baseline. However the option

allows the requirement for mandatory carriage of “ADS-B out” to be imposed in certain areas, based on common criteria. The aim is to identify these criteria during the development of the rule. The requirements for mandatory carriage of ADS-B and the associated timeframes will take into account the availability of certification material, the costs for equipage of different categories of airspace users, the availability of surveillance services based on ADS-B as well as specificities of such technologies (e.g. security issues). However it should be observed that all the responses received from the aircraft operators indicated a full support for option 3 (the one addressing the 1090ES capability as a prerequisite for ADS-B as well as the mandatory carriage of ADS-B out equipment in certain areas) provided the standardisation, certification and implementation requirements applicable to the ground systems are identified.

2.3.2.6 Separation standards

Comment

The requirements related to the separation standards as well as the harmonisation of such standards should be clarified.

Response and Action

The questionnaire distributed in the context of the informal consultation showed that currently there are no capacity bottlenecks generated by the use of different separation standards within the airspace that is relevant to the EATMN. However the idea to address the harmonisation of the separation minima was supported by the stakeholders. Two possibilities to address this harmonisation were identified: the definition in the implementing rule of specific criteria which would determine the separation minima to be applied in a given environment or the obligation of the air navigation service providers to ensure that, when using given separation minima such as 3 or 5 NM (the choice of the value being left to their responsibility), they comply with specific technical and/or operational requirements laid down in the Regulation. This latter alternative was presented in the draft regulatory approach submitted for consultation. It was considered that the obligation to apply specific separation standards based on criteria defined in the implementing rule would have been too rigid and would not have taken into account the specificities and the particularities of the different ATM environment within the SES area.

Comment

It is not clear if 3/5 NM separation will be mandated in the entire airspace of applicability of the draft implementing rule. If this is the intention, this may not be cost effective in certain operational environments (e.g. below a certain traffic level).

Response and Action

It is not intended to mandate 3/5 NM separations in the implementing rule (see also the response above). However, the rule will identify in its performance section specific performance requirements that will have to be respected by the surveillance systems whenever the service providers choose to apply 3/5 NM separation (but without being obliged to use 3/5 NM). These performance requirements will be extracted from the document currently under development on the basis of the former “Surveillance Standard”. It should be noted that once performance requirements relative to other surveillance applications/separations are available, the implementing rule may be updated in order to take them into account.

2.3.2.7 State aircraft

Comment

Issues related to military aircraft exemptions, equipage timescales, and operational restrictions for exempted aircraft need to be addressed.

Response and Action

The particular case relative to the equipage of State aircraft (flying IFR/GAT) will be specifically addressed in the draft implementing rule. It is acknowledged that the operators of State aircraft have particular constraints with regard the equipage of their aircraft, related mainly to the existence of large fleets, long procurement cycles, expensive retrofits, etc. Therefore, the draft implementing rule will identify specific transitional arrangements and exemption policies applicable to the different categories State aircraft (e.g. transport type, non-transport type) within the scope of the rule. Similarly with the Air-Ground Voice Channel Spacing implementing rule, the air navigation service providers will have to accept the non-equipped State aircraft, provided that they can be safely handled within the capacity limits of the ATM system.

2.3.2.8 Applicability to non-EU aircraft

Comment

How will the interoperability with non-EU aircraft and their conformity assessment be addressed?

Response and Action

The requirements relative to the mandatory carriage of specific equipment will be applicable to all aircraft flying IFR/GAT within the airspace of application (see also the next comment). Therefore these requirements will apply irrespective of the country of registration of the aircraft (to all EU and non-EU aircraft that will enter the airspace of application).

With regard to the conformity assessment requirements applicable to airborne constituents, the obligation of the manufacturers to issue an EC declaration for conformity/suitability for constituents (before putting them on the EU market) stems from the Article 5 of the SES interoperability Regulation (552/2004). The draft implementing rule can only interpret the requirement and the procedures associated to it but it cannot question it as such.

There is also a difference between the obligation to issue an EC certificate, applicable before putting a constituent on the EU market, requirement coming from 552/2004 and the obligation to apply the requirements of the IR in terms of equipment/performance, applicable to all aircraft flying in the airspace of applicability of the rule. Therefore the non-EU aircraft will have to comply with the interoperability and performance requirements of the draft implementing rule, without having to show an EC declaration of conformity for the airborne equipment.

2.3.2.9 Conformity assessment

Comment

It should be made clear that for the conformity assessment processes applicable to the airborne components are included in the appropriate EASA airworthiness processes.

Response and Action

For the EU aircraft it is proposed (as it was done for the VCS implementing rule recently approved by the Single Sky Committee) to consider that the airworthiness processes

performed by EASA constitute acceptable procedures for satisfying SES conformity assessment requirements, provided they include the demonstration of compliance with the Regulation . This principle has the objective to avoid the duplication of showing compliance in front of two different bodies (EASA and a "SES" one). By definition this approach can only apply to aircraft certified by EASA (within the scope of article 4 of 1592/2002). Regarding "non-EU" aircraft, as mentioned under 2.3.2.8, they are anyway subject to the same interoperability and performance requirements than other aircraft.

Comment

It was felt that the conformity assessment processes applicable to the ground systems need to address the case when the performance of the ground system depends on the airborne components and in particular the impact of the exemptions related to the carriage of airborne equipment on that performance and on the related verification procedures.

Response and Action

It is acknowledged that the performance of the end to end surveillance systems may depend (depending on the type of surveillance) on the level of aircraft equipage. Therefore the impact of the airborne component and of the possible carriage exemptions on the performance of ground systems and the associated verification procedures will be addressed during the drafting phase, in the context of the development of the conformity assessment requirements.

2.3.2.10 Development of the Community Specifications

Comment

It was considered by some stakeholders that the development of the CS to be nominated as means of compliance with the implementing rule should have the appropriate visibility and stakeholders' involvement before their adoption/recognition as such means of compliance.

Response and Action

The final report developed in the context of the EC mandate on SPI will include a document identifying the proposed means of compliance with the draft implementing rule. Assuming current practices are maintained, the SES standardisation work programme will be discussed in the framework of the Industry Consultation Body before being recommended to the Commission. The proposals included in the SPI Final Report will be used to trigger discussions within ICB. Once the Commission has agreed on the work programme, they will issue mandates as required. The development process will take place according with Article 4 of the SES framework Regulation (549/2004) through the European Standardisation Organisations with support from EUROCAE (on technical issues) as European Standards or through EUROCONTROL (mainly on operational matters) as EUROCONTROL Specification, before their recognition as Community Specifications.

2.3.2.11 Spectrum protection

Comment

It was considered that the issues related to the spectrum are broader than the scope of the SPI implementing rule while any detailed requirements on the spectrum protection would go away from the "black-box" approach, being technology specific.

Response and Action

It is acknowledged that any detailed requirements addressing the spectrum protection, being technology specific will be left at the level of Community Specifications. However, high level principles, technology independent, may be identified during the development of the implementing rule.

2.3.2.12 Rationalization of the surveillance infrastructure

Comment

It was felt that the Regulatory Approach should include within the regulatory coverage requirements encouraging the exploration of data sharing between ANSPs in order to promote the rationalisation of surveillance infrastructure. It was considered that without placing obligations of ANSPs to explore data sharing opportunities, then the benefits of rationalisation of the over-subscribed European surveillance infrastructure may never be realised.

Response and Action

It is intended to address the rationalisation of the surveillance infrastructure through high level requirements aimed to explore surveillance data sharing and exchange opportunities before deploying the surveillance infrastructure, without entering into the technical details, which should be left, if needed, at the level of Community Specifications.

2.3.2.13 Implementation conditions

Comment

The implementing rule should be more precise with regard the geographical applicability of requirements, mainly with regard the mandatory carriage of specific equipment in airspace where ground infrastructure is not available and is not economically justified due to low level of traffic.

Response and Action

By default the SES interoperability Regulation applies to all systems, constituents and associated procedures within the EATMN. However, the scope of application can be fine tuned in each implementing rule, which can take into account that there are particular areas or types of traffic for which the equipage would not be justifiable as revealed by CBA studies (e.g. low levels of traffic or in certain areas in the lower airspace in which deployment of surveillance infrastructure is not required or economically justified). Therefore a phased approach (e.g. starting with the core area) and/or transitional arrangements may be considered with regard the implementation conditions.

This approach will also address the dates relative to the mandatory carriage of airborne equipment, with different dates for the forward fit of new aircraft and for retrofit, allowing sufficient time to equip the aircraft already in service.

ANNEXES

ANNEX A

Annex A contains a list of those Stakeholders that provided comments on the formal consultation and that agreed to their names being published.

ANNEX B

Annex B provides a table containing all the comments provided by Stakeholders.

The table cross-checks the comments with the associated sections of the SOR.

ANNEX A

LIST OF STAKEHOLDERS THAT PROVIDED COMMENTS TO THE FORMAL CONSULTATION

From the total of 38 stakeholders who provided comments on the Draft Regulatory Approach for Surveillance Performance and Interoperability Requirements, 37 stakeholders agreed to publish their names, which can be found below:

Country	Organisation	Contact Name
Austria (AT)	AUSTRO CONTROL	Gerhard Wagner
Belgium (BE)	BELGOCONTROL	Dany De Vos
Belgium (BE)	Civil Aviation Authority	Erika Billen
Czech Republic (CZ)	Ministry of Transport of the Czech Republic	Oldrich Gorgol
France (FR)	DAST	Geneviève Eydaleine
France (FR)	DIRCAM	Lcl Denis Bouvier
France (FR)	DSNA	Patrick Souchu
FYROM (MK)	Civil Aviation Agency	Saso Andonov
Germany (DE)	Bundesministerium der Verteidigung FÜ L III 4	LtCol Osman Saafan
Germany (DE)	DFS Deutsche Flugsicherung GmbH	Juergen Dzuba
Hungary (HU)	HungaroControl	Valentin Omajnikov
Italy (IT)	ENAV S.p.A.	-
Latvia (LV)	LGS - Latvijas Gaisa Satiksme	Jekaterina Kusko
Netherlands (NL)	LVNL - Luchtverkeersleiding	Paul de Kraker
Poland (PL)	Civil Aviation Office	Boguslaw Bossowski
Poland (PL)	PANSA - Polish Air Navigation Services	Dariusz Jasinski
Portugal (PT)	INAC - Instituto de Aviação Civil	Francisco Balacó
Portugal (PT)	NAV - Navegação Aérea de Portugal	José dos Santos Mestre Vermelhudo
Romania (RO)	ROMATSA	Mariana Spanu
Slovenia (SI)	Slovenia Control	Rado Kriz
Spain (ES)	AENA	Miguel Ángel Salamanca Bueno
Sweden (SE)	Civil Aviation Authority	Ahti Hietala
Sweden (SE)	LFV ANS	Rolf Norman
Switzerland (CH)	FOCA - Federal Office of Civil Aviation	Paul Stucki
Switzerland (CH)	Skyguide	Aldo Bravo and Philippe Chaufforeaux
Turkey (TR)	Directorate General of Civil Aviation	Orkun Kaya
United Kingdom (GB)	Civil Aviation Authority	Ray Woods

Country	Organisation	Contact Name
United Kingdom (GB)	Ministry of Defence	Ray Woods
United Kingdom (GB)	NATS	Ray Woods
n/a	AEA - Association of European Airlines	Araceli Cal
n/a	Airbus	Delphine Blais
n/a	ERA - European Regions Airline Association	Robert Peel
n/a	IACA - International Air Carrier Association	Erik Moyson
n/a	IATA - International Air Transport Association	Anthony van der Veldt
n/a	ICAO EUR/NAT	Elkhan Nahmadov
n/a	IFATCA	Marc Baumgartner
n/a	NATO	Juan Carlos Martí
n/a	Tyrolean Airways	Markus Köchle

ANNEX B

TABLE OF RECEIVED COMMENTS

1. The following table details all the comments received as part of the Surveillances performance and interoperability requirements draft regulatory approach Consultation and cross-refers each comment to an appropriate response within the SOR document.
2. The table headings are as follows:

A-ENPRM/07-003 DRAFT REGULATORY APPROACH FOR SURVEILLANCE PERFORMANCE AND INTEROPERABILITY REQUIREMENTS						
§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation

- a) The first column cross-refers to the relevant paragraph (article / recital) number in the draft regulatory approach on SPI.
- b) The 'Comment', 'Reason(s) for Comment' and 'Proposed Change/Text' columns copy exactly the textual comments as provided in the Consultation Response Sheets.
- c) The '**Reference § No SOR**' column cross-refers to the relevant section of the SOR.
- d) The 'Disposal' column provides information about the way the received comment was treated
- e) The 'Organisation' column identifies the source of the comment

A-ENPRM/07-003 ON THE DRAFT REGULATORY APPROACH FOR SURVEILLANCE PERFORMANCE AND INTEROPERABILITY REQUIREMENTS					
I agree with Option 3	I prefer Option 1	I prefer Option 2	I propose another option	Comments	Organisation
X					Austria, Austro Control
X					Belgium, CAA
X					Belgium, Belgocontrol
X					Czech Republic, Ministry of Transport
			X	Option 2 is preferred as a minimum. Option 3 could be acceptable depending of operator acceptance and implementing dates of ADS-B. There are only local needs for ADS-B in the short/medium term to extend radar coverage at low altitude which may not be sufficient to justify a mandate for airborne equipage. On the longer term, non replacement of a few radars could be envisaged if all aircraft are equipped with certified ADS-B. Use of ADS-B for separation purpose also needs to be validated. So it is considered that it may be too early to step into option 3.	France, DAST
		X		The French Ministry of Defence supports option 2 providing the exemption policy for State Aircraft equipage with mode S will continue after 2009. Due to budget restriction merged with lack of "Commercial of the Shelf" for very specific military avionics, French MoD cannot afford equipping its whole fleet in due time. Regarding the Regulatory Approach on ground elements, radar stations operated by the French MoD (even those handling civilian aircraft in GAT) do not export any surveillance data to the civilian networks. However, military ground elements receive surveillance data transmitted under the Asterix format by civilian surveillance stations. Therefore, the French Mod advocates the option 2.	France, DIRCAM
			X	Option 2 is preferred as a minimum, option 3 could be acceptable depending of operator acceptance and implementing dates of ADS-B. There are only local needs for ADS-B in the short medium term to extend radar coverage at low altitude which may not be sufficient to justify a mandate for airborne equipage. On the longer term, non replacement of a few radars could be envisaged if all aircraft are equipped with certified ADS-B. Use of ADS-B for separation purpose also needs to be validated. So it is considered that it may be too early to step into option 3.	France, DSNA

A-ENPRM/07-003 ON THE DRAFT REGULATORY APPROACH FOR SURVEILLANCE PERFORMANCE AND INTEROPERABILITY REQUIREMENTS					
I agree with Option 3	I prefer Option 1	I prefer Option 2	I propose another option	Comments	Organisation
X				The present wording is rather generic and covers all aspects which are relevant to the German militaries. The future draft will be the acid test.	Germany, Bundesministerium der Verteidigung Fü L III 4
X					Germany, DFS
X					Hungary, HungaroControl
X					Italy, ENAV
X				Option3 is chosen, because it will allow the interoperability of the airborne equipment with the current and foreseen surveillance technologies (three New Mode S radars are planned to be installed in Latvia and replace current MSSR till year 2009) - f.i. mandatory carriage of Mode S ELS with SI and 1090 ES capabilities which will also support the introduction of new technologies (Wide Area Multilateration which is planned to be installed in Riga airport (RIX) in year 2007/2008 in frames of WAMRIX project).	Latvia, LGS
X					FYROM, Civil Aviation Agency
X				LVNL prefers option 3 because it optimally supports our system strategy.	Netherlands, LVNL
X				Because the Surveillance Strategy for ECAC foresees the evolution from "traditional" surveillance data sources (radars) towards new solutions i.e. multilateration and ADS-B and such migration is planned in PANSAs Strategy as well, we find that legislation in this field in the development or early implementation stage will have positive impact on the process, giving clear view what we are to achieve and how. In our opinion the scope of the draft implementing rule and the objectives proposed in the Regulatory Approach document are sufficient and fully acceptable.	Poland, Civil Aviation Office
X				Because the Surveillance Strategy for ECAC foresees the evolution from "traditional" surveillance data sources (radars) towards new solutions i.e. multilateration and ADS-B and such migration is planned in PANSAs Strategy as well, we find that legislation in this field in the development or early implementation stage will have positive impact on the process, giving clear view what we are to achieve and how. In our opinion the scope of the draft implementing rule and the objectives proposed in the Regulatory Approach document are sufficient and fully acceptable.	Poland, PANSAs

A-ENPRM/07-003 ON THE DRAFT REGULATORY APPROACH FOR					
SURVEILLANCE PERFORMANCE AND INTEROPERABILITY REQUIREMENTS					
I agree with Option 3	I prefer Option 1	I prefer Option 2	I propose another option	Comments	Organisation
X				<p>Option 3 is less restrictive for future decisions on technologies whose application can be foreseen.</p> <p>The airborne part of the system is a major concern at this time. As it is stated in the regulatory approach, the problem lies not in the equipment of new aircraft but in the retrofitting of older ones (as a matter of fact, the main Portuguese operators have been equipping their airplanes with EHS transponders).</p> <p>The dates for implementation, namely for the retrofitting of older aircraft will be a relevant issue (as well as considering to what extent that is justifiable) to be considered at a later stage.</p>	Portugal, INAC
			X	<p>This option selection is due to doubts we have on the applicability of options 2 and 3 to the ground system.</p> <p>We support option 1 as minimum.</p> <p>We also will support option 2 and option 3, if they don't require the ground system (radar stations) to be upgraded to mode S capabilities.</p> <p>We have no objections to the other foreseen means of surveillance (ADS-B or WAM).</p>	Portugal, NAV
	X			The other options envisage major financial investments and use of new technologies which do not provide enough practical/experimental results.	Romania, ROMATSA
X					Slovenia, Slovenia Control
X				AENA agrees with this draft regarding issues identified as subject to be regulated, specially the surveillance system's performance requirements (without defining the system's components specifications, i.e. considering the system as a black box) and regarding the data protocol interoperability requirements guaranteeing the exchange of data between different systems.	Spain, AENA
X				<p>The implementing rule should contain:</p> <ul style="list-style-type: none"> - an exemption policy for military state aircraft - an exemption policy for general aviation in the Swedish air space flying below flight level 95 in areas where the equipment is considered not necessary. 	Sweden, CAA

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SURVEILLANCE PERFORMANCE AND INTEROPERABILITY REQUIREMENTS					
I agree with Option 3	I prefer Option 1	I prefer Option 2	I propose another option	Comments	Organisation
	X			<p>The regulatory approach as in option 2 and 3 would probably force us to investments in technical solutions that aren't required all over our airspace and we can't see any possibilities in option 2 and 3 to have different requirements and technical solutions for different types of airspace with clearly defined requirements on the interoperability between technical solutions used in the different types of airspace.</p> <p>We can accept and foresee that there will be requirements that go further than option 1 in those parts of our airspace that require it, but we as ANSP wouldn't take the economical responsibility for our services seriously if we force ourselves and our customers to make investments in technical solutions in airspace that doesn't require the benefits of the new technology.</p>	Sweden, LfV ANS
			X	<p>The airborne equipage requirements should be as in the 7 States' Mode S programme which is managed by EUROCONTROL (and include VFR). This option might be called Option 2+.</p>	Switzerland, FOCA
		X		<p>In our opinion, option 3 is too ambitious for today's situation and prefer a step by step approach. Provisions can be made in order to leave the doors open for an extension of this document towards an option 3 as a long term solution, but it should be avoided to treat these parts already now.</p> <p>Option 2 represents an affordable and appropriate objective already practically endorsed by the major stakeholders.</p> <p>Option 3 would be acceptable for Skyguide with the addition of more precise explanations and definitions about the real and mandatory obligations that would be linked to an ADS-B/WAM implementation by the ANSPs. The sentence "possibility to further facilitate the deployment of new technologies" (p.21) is far too imprecise in order for us to endorse blindly such an option and its further derived obligations.</p> <p>With mandatory ADS-B and/or WAM implementation, Option 3 could also be too costly (especially for the airlines), bringing the implementation at risk.</p> <p>ADS-B and WAM are also viewed currently as non-mature enough regarding validation and qualification processes, which can become major obstacles to a real implementation.</p>	Switzerland, SKYGUIDE
X					Turkey, DGCA
X				<p>In the interests of providing a progressive path to the deployment of future surveillance systems based on multilateral techniques and ADS-B, the UK supports Option 3 as described in the draft RA.</p>	United Kingdom, CAA/ MoD/ NATS

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X				<p>The actual Surveillance mandates for ELS and EHS are a reality and effectively came into force per 31 March 2007. Many airlines have invested in both ELS and EHS. IATA/AEA/IACA considers ELS/EHS as an interim step towards ADS-B and therefore the emphasis should rather be on mandating requirements for ADS-B for both on the ground and airborne than making further mandate arrangements for Mode S ELS/EHS in other areas of Europe.</p> <p>In support of the integration between airborne and ground infrastructure, IATA/AEA/IACA find it <u>absolutely necessary</u> to mandate standardization, implementation and certification requirements for the ground side (and not only the airborne carriage side).</p>	AEA/ IATA/ IACA
X				Option 3 provides basis for optimum visibility of the aeroplane, allowing best safety and operational benefits. However, aircraft movement being not limited to Europe, coordination with non-European Bodies has to be ensured when defining new surveillance applications/services to maintain a global world-wide interoperability.	Airbus
X				Option 3: as it appears to have the potential to introduce new functionalities in the SES airspace in a balanced way and is in full accordance with IATA/AEA position.	ERA
X				Option 3 would maximize benefits from Mode-S implementation and allow early deployment of ADS-B and WAM, while respecting ICAO SARPS and Regional Supplementary procedures provisions, the need for advance mandatory carriage notification time and the exemption policy requirements.	ICAO EUR/NAT
			X	<p>Another Option: Modified option 3 without requirements on airspace users and with additional requirements on service providers. The aircraft are already highly regulated, high capability and high performance platforms. The ground systems, especially their procedures in the use of surveillance technology, are not efficient in their use of surveillance equipment (unnecessary duplication, etc) and are not efficiently interoperable. Improvements must be demonstrated by the ground system before additional requirements are placed on the aircraft. The ground system should lead the implementation of new capabilities to provide incentives for early adoption by airspace users who should be able to expect to be able to use new capabilities from the time the aircraft is upgraded. The traditional practice of mandating aircraft equipage without a corresponding requirement on the service providers to use the mandated equipment should not continue. Option 1 of simply regulating what is already being done offers nothing of tangible benefit to the ATM system.</p> <p>Options 2 and 3 which place additional requirements on airspace users are unacceptable while the ground systems fail to make efficient use of Mode S already mandated to the majority of aircraft operations in the target area of application. Preparation for "the future" is essential – but given the number of aircraft already equipped with Mode S and ADS-B this cannot really be considered "the future" but a need for ground systems to catch-up with current airframe capabilities.</p>	IFATCA

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			X	<p>In spite of the fact that state aircraft is out of the scope, of the SES, it is in the interest of the military to safeguard the interoperability between civil and military systems.</p> <p>However, the compliance with the new civil aviation requirements is extremely demanding for the military and not always feasible in view of the limits imposed by operational, technical and financial constraints.</p> <p>Therefore, whatever option might be selected in the Draft Regulatory Approach, it is essential that state aircraft can be accommodated without any adverse impact on military operations and training, in order to avoid any negative consequences for NATO operational capabilities.</p>	NATO
X				Option 3: as it has the best potential to introduce new functionalities in the SES airspace – in full accordance with IATA/AEA position.	Tyrolean Airways

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
all	There are no indication of applicable timeframe to be considered in the definition of the different options. This is particularly important for option 3 feasibility and acceptability.		Add a specific timeframe in the IR for the applicability of the requirements.	2.3.2.13	Accepted	France, DAST
all	There is no indication of applicable timeframe to be considered in the definition of the different options. This is particularly important for option 3 feasibility and acceptability.			2.3.2.13	Accepted	France, DSN
The complete document	It resulted from the questionnaire that the use of Asterix would be explicitly mandated in the Implementing Rule, The draft Regulatory Approach remains rather unclear about this. It is proposed to adapt the document so as to make it clear that the use of Asterix will be mandated in the Implementing Rule, and this for all options proposed.	To improve the interoperability; to formalize today's de facto standard data format.		2.3.1	Noted The way to address ASTERIX will be decided during the development of the draft implementing rule. The basic principle is to be technology independent whenever possible.	Belgium, Belgocontrol
General Comment	Economic impact of option 3 is estimated as "major impact". This remains very high-level.	There is a need to have more detailed data and facts and figures on that. Checks should be done to ensure that all Member States and ANSPs are ready for such big investments.	Make sure that in the upcoming Implementing Rule, enough effort is made to evaluate real financial impact and investments to be done.	2.3.2.1	Accepted	Belgium, CAA
Global	ADS-C should also be included as mean of surveillance.	ADS-C is a very important mean of surveillance in oceanic airspace and on its transition to the continental airspace. It is the only mean possible for areas more 250NM away from any land.		2.3.1	Accepted	Portugal, NAV

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
General	<p>In the opinion of Aena, the regulatory framework should identify specific methods and tools for the assessment of performances.</p> <p>In addition, Aena wants to stress the importance of issues relative to potential impact of Wind Turbines on surveillance systems and the need for service providers to have access to regulatory or non regulatory elements to mitigate the situation.</p>			2.3.1	<p>Partially Accepted</p> <p>The principles related to the conformity/performance assessment will be identified in the draft implementing rule.</p> <p>The wind turbines issue is acknowledged however it is proposed to address it in a context wider than SPI</p>	Spain, AENA
General	<p>To ensure interoperability, it needs to be expressed in the IR which version of the 1090ES system that is considered (i.e. equivalent to the existing standards DO260, 260A and 260A change 1, or the future standards such as being discussed by RTCA for the support of ASAS Package I applications or potential future standards to address SESAR requirements).</p>	<p>The transition from the current airborne Mode-S transponder (DO260 or 260A) needs to be covered as it is well-known these standards does not meet the requirements of core European airspace.</p> <p>The provision of 1090ES via the Mode-S transponder is currently non-certified and initial certification under the Eurocontrol CASCADE initiative (EASA NPA/AMC) due 2008 will provide DO260/260A level with certain "Permissible deviation for initial implementations" (e.g. w.r.t. quality indicators and emergency status). This means upgrades has to be done in existing equipment.</p>		2.3.2.2 2.3.2.5	Accepted	Sweden, LRV ANS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
General	<p>Why not focus on interoperability issues between the different possible solutions such as ADS-B, extended squitter and so on.</p> <p>How can ANSP serve the different aircraft operators independent of their equipment. How can ANSP provide a mixture of the different techniques?</p>	We foresee that it will be required to use several different technologies, but we can't see that the interoperability between the different possible solutions is taken care of.		2.3.1	<p>Noted</p> <p>The aim is to be technology independent whenever possible.</p>	Sweden, LFV ANS
General Comment	<p><i>IATA/AEA/IACA support 1090ES as the single, interoperable link for the foreseeable future for surveillance as it supports ADS-B.</i></p> <p><i>IATA/AEA/IACA aims at the expeditious implementation of ADS-B in Europe where justified by CBA with a target date of 2015.</i></p> <p><i>IATA/AEA/IACA is of the opinion that only traffic which is required to deliver benefits based on a CBA, and whilst ensuring the required level of safety in the defined airspace, should be subject to mandatory airborne carriage requirements.</i></p> <p><i>In order to achieve beneficial goals of safe, efficient and high capacity operations, IATA/AEA/IACA believes that a critical volume of airspace needs to be available.</i></p>			2.3.1	Noted	AEA/ IATA/ IACA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
General Comment	<p><i>Development of EASA Airborne Certification Material (AMC) should be accelerated to be ready well ahead of operational use and should accommodate a wide range of potential ADS-B applications with the aim to avoid multiple airborne equipment upgrades due to ever changing certification requirements.</i></p> <p><i>In this context, there should be a clear link with the priorities for EASA rulemaking activity to ensure that they remain consistent with the priorities of Single European Sky.</i></p>	<p><i>Lessons should be learned from the past experiences related to ELS/EHS and the fact that existing 1090 Extended Squitter installations might not fully fit the future EASA certification requirements for ADS-B (existing 1090 installations were only certified on a non-interfering basis but not for operational use).</i></p>		2.3.2.10	Accepted	AEA/ IATA/ IACA
General Comment	<p><i>This development should happen in harmonization with other regions which plan for the implementation of ADS-B applications (ie US FAA, Australia etc). Attention should be drawn with this regard in order to be able to ensure potential interoperability in a broader region.</i></p>			2.3.2.3	Accepted	AEA/ IATA/ IACA
Executive Summary (Third paragraph) Section 1.1	<p>The proposed future regulation does not seem to consider coordination with bodies outside the European Union at large.</p>	<p>Coordination with the US, for example, must nevertheless be considered so as to avoid discrepancies with existing regulations outside Europe, with possible impact on the airborne component whose movements are not limited by European borders. Global interoperability has been achieved so far, and must be preserved in future regional systems, as acknowledged and supported within the EC SESAR and USA NGATS projects.</p>		2.3.2.3	Accepted	Airbus

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
1. Introduction	<p>The Surveillance Performance and Interoperability Mandate does not limit itself to airspace where 3NM and 5NM separation is provided. This limitation has been set as a first phase in the development of the Implementing Rule (because the existing Eurocontrol Surveillance Standard could be considered to cover this topic and hence easily be edited). Other surveillance applications may need to be covered in future development of this Interoperability Rule, for example:</p> <ul style="list-style-type: none"> - 2.5NM separation on final approach - 10NM separation airspace - Military formation flights - air to air surveillance (e.g. Station Keeping Equipment) - ground/surface movement surveillance 	<p>The Regulatory Approach document does not make it clear that developing the requirements for surveillance applications concerning 3NM and 5NM separation is only the first step in developing this surveillance performance rule, and that other surveillance applications will need to be developed in subsequent phases of development of this rule.</p>	<p>Add a new paragraph after 1.1:</p> <p>It has been decided to adopt a phased approach to developing the SPI requirements due to the wide scope that surveillance systems cover. Therefore, the scope of this initial phase of development has been limited to surveillance applications where 3NM and 5NM minimum separation are provided. Applications such as surface movement surveillance, air-to-air surveillance and separation minima other than 3NM and 5NM may be covered in future phases of development of this regulatory material.</p>	2.3.1	Accepted	<p>United Kingdom, CAA/ MoD/ NATS</p>
Para 6	<p><i>In the transition process from radar surveillance to full ADS-B deployment, IATA/AEA/IACA support a relatively quick development and application of ADS-B.</i></p> <p><i>Exemption policies should be aligned with similar Eurocontrol programs.</i></p>	<p><i>As a large amount of aircraft are already fitted with 1090 ES capabilities, experience needs to be gained as soon as possible, leading to a fully available air/ground system around 2015 with up and running ADS-B applications.</i></p>		2.3.2.7 2.3.2.13	Accepted	<p>AEA/ IATA/ IACA</p>

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2	It resulted from the questionnaire that the Regulatory Approach should expand on the inclusion in the Implementing Rule of provisions making mandatory the Deployment of specific airport surveillance facilities/systems. The topic does not seem to have been addressed in the current version of the Regulatory Approach. It is proposed to do so, even if the proposal is to not address the airport facilities/systems in the Implementing Rule.	To obtain a clear delineation of the scope of the Implementing Rule.		2.3.1	Noted The Regulatory Approach does not prevent the inclusion of airport surveillance systems in the draft implementing rule. this will be further addressed during the development of the draft implementing rule.	Belgium, Belgocontrol
2.2	It should be indicated in the Regulatory Approach whether air-to-air surveillance is part of the scope (eg. TIS-b application).	To obtain a clear delineation of the scope.		2.3.1	Accepted	Belgium, Belgocontrol
2.2.1	The text states "Currently, radar services are used for the separation of aircraft throughout the EATMN in en route....." This isn't true since there are still parts without radar coverage and there is no intention to establish it with the current traffic situation.	We still want to have the possibility to decide whether the airspace needs radar coverage or other surveillance technique.		2.3.1	Accepted	Sweden, LFV ANS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2.1	<p>This view of the operational environment is the traditional view of tactical air traffic control and not the more strategic view of air traffic management contained in the ICAO Concept, draft SESAR Concept, etc. The absolute requirement (both in traditional and concept views) for “intent information” is not included. The references to fixed routes, terminal surveillance and en route surveillance are increasingly an out-dated view. The purpose of Air Traffic Management is the safe, orderly and efficient (cost-effective, etc) flows of air traffic (of course without collisions). The limited view of surveillance (as currently expressed) will inhibit the formulation of appropriate high level regulation of surveillance performance and interoperability</p>	<p>The ICAO Concept is the ICAO Global Air Traffic Management Operational Concept (ICAO Doc 9854), and the SESAR Concept is expected to be consistent with the ICAO Concept. The issues relating to surveillance and its performance are still being extensively worked on within ICAO and other international bodies and there are still various views of exactly what surveillance is and what surveillance performance means. One problem is that air traffic management has become so familiar with radar and radar control that new systems are being classified as “radar or radar-like” or not. Automatic Dependent Surveillance – Contract (ADS-C) is also a form of surveillance but at this stage not a “radar-like” one. In fact many areas of the world still use non-radar air traffic management based on pilot position reports – and these position reports should be considered as part of ATM surveillance of the aircraft.</p> <p>Surveillance can also include what is traditionally flight plan data – for it is impossible for ATM to discharge its responsibility for safe, orderly and expeditious flows if it only knows where the aircraft is and not where the aircraft wants to go. For example, consider the situation today where a controller has an aircraft diverting off route around weather and the controller wishes the aircraft to transit adjacent sector’s airspace. There are an unacceptable high number of cases today where although the adjacent controller can see the aircraft return on their radar (perhaps just as an SSR code) but without the associated flight plan data they are unable to accept the aircraft to transit their airspace.</p>		2.3.1	<p>Rejected</p> <p>The referenced section only describes the current operational environment</p>	IFATCA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2.1 (Cont'd)		<p>The second paragraph makes reference to fixed routes, but the intention for the future concepts is to limit the number of fixed routes.</p> <p>Likewise there are also references to “terminal” and “en route” but these are terms should be avoided as from a future ATM perspective there should not be a distinction between these areas in regard to ATM surveillance. The airspace should be treated as a whole and any surveillance performance requirements based on demonstrated operational functional needs (not in relation to its position along the aircraft trajectory). It is not expected that regulatory actions in regard to the SPI Mandate requires the immediate addressing of the many issues in relation to surveillance currently under discussion in ICAO and elsewhere, however the regulatory actions should be intended to assist in guiding future actions and not be looking backwards to the traditional views of ATM.</p>				IFATCA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
Section 2.2.2	<p>A EUROCONTROL Standard for Radar Surveillance, but still under definition process, is identified in second paragraph of Section 2.2.2. It aims at specifying the minimum required performance of ATM Surveillance Systems in a technology independent way.</p> <p>Role of this standard has to be clarified in regards with proposed Interoperability Rule, as well as the way it would interact with current applicable ICAO, RTCA & EUROCAE standards used as a baseline for aircraft surveillance systems' design and certification (namely ELS, EHS, ADS-B ...). If this EUROCONTROL standard for Radar Surveillance is identified as a means of compliance to proposed Implementing Rule, this specification has to be clearly defined and validated by all the stakeholders before "adoption". It should be submitted to consultation as the IR and ICAO/EUROCAE/RTCA standards are.</p>	<p>Baselines for the development of Airborne systems are currently ICAO requirements, EUROCAE & RTCA standards. Airborne avionics capable of ELS & EHS are already certified and certification of ADS-B Out is on going.</p>		2.3.2.10	Accepted	Airbus

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2.2	The background on the technical environment is expressed in current terms, but from the regulatory viewpoint it is more appropriate to consider the generic types of surveillance – that is non-cooperative surveillance, co-operative independent surveillance, and cooperative dependent surveillance	Broad high level regulatory action should not be focussed on particular implementations (or equipment) but rather on functional classifications of surveillance equipment (and perhaps then list current technologies under each classification). For example questions that should subsequently be answered are: When is there a demonstrated need (safety or otherwise) for non-cooperative surveillance? What are the regulatory requirements for co-operative independent surveillance? What are the regulatory requirements for dependent surveillance (for example: who is responsible for ensuring that the transmitted or received data from a dependent source is to an acceptable quality for ATM and who is responsible for stopping the automatic broadcast of incorrect information?).		2.3.1	Rejected The referenced section only describes the current technical environment	IFATCA
2.2.3 (Surveillance architecture)	Under the item “Surveillance sub-system on the Aircraft” another item to be included: “Aircraft interface for ADS-B”!	ADS-B is part of the “Surveillance systems on the Ground” and to be consistent with this item it must be included in previous item!!! There is no ADS-B without equipment in Aircraft!!!!	The following text (or similar to this!) to be added: - Aircraft interface for ADS-B (VDL 4 or MODE S EHS)	2.3.1	Accepted	FYROM, Civil Aviation Agency
2.2.3 (Surveillance architecture)	Don't you think that ACAS should be included somewhere under item “Surveillance sub-system on the Aircraft”!!!!	ACAS is warning system , but in fact his surveillance function (use of surveillance data) is used for warning!!! No surveillance data – no warnings!!!!	- Aircraft interfaces such as SSR transponders (Mode A, C and S) or ACAS	2.3.1	Partially accepted The air-to-air surveillance is outside the scope of the draft implementing rule	FYROM, Civil Aviation Agency

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2.3 (Figure 1: Surveillance model)	In the Surveillance model interchange of the surveillance data between Aircraft and Aircraft is missing!!!	ADS-B and ACAS are strictly connected with interchange of surveillance data between Aircraft!!!	Add another block in the same picture (same as Surveillance sub-system on the Aircraft)!!!	2.3.1	Partially accepted The air-to-air surveillance is outside the scope of the draft implementing rule	FYROM, Civil Aviation Agency
Page 9	<i>Remark:</i> Aircraft data generation is more than altimeter and GNSS interfaces			2.3.1	Accepted	AEA/ IATA/ IACA
2.2.4 (Current situation and expected developments)	In the middle of the page (row 27) is written:... based on GNSS, including GPS and Galileo.	GNSS is based at the moment on GPS, but in future GLONASS, GALILEO, BEIDOU, GAGAN, etc. will be included!!!! What about EGNOS???	Delete: including GPS and Galileo!	2.3.1	Accepted	FYROM, Civil Aviation Agency
Page10	Paragraph reads <i>"It provides an evolutionary and achievable path from the current SSR based infrastructure, which can be described as cooperative independent surveillance (CIS), to an infrastructure using ADS-B where the position information is primarily based upon GNSS, including GPS and Galileo"</i> The reference to GNSS should be broadened to refer to <i>GPS, Galileo, Glonass Compass 1M.</i>	Galileo will have to go a long way, non-European operators flying in Europe, e.g. Russian, Chinese, may be using Glonass and Compass 1M.	The reference to GNSS should include: "including GPS, Galileo, Glonass Compass 1M" .	2.3.1	Accepted	AEA/ IATA/ IACA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
Page10	<p>Paragraph: <i>“The first step in the introduction of SSR Mode S in Europe is known as Mode S Elementary Surveillance (ELS), followed by the Mode S Enhanced Surveillance (EHS) that builds upon the concept of ELS. Mode S ELS is being deployed initially within the airspace of Belgium, France, Germany, Luxembourg, the Netherlands, Switzerland and the United Kingdom and it is expected that other European States will upgrade to Mode S at a later stage. EHS, supporting the extraction and the downlink of aircraft derived data (ADD), is essential to improve safety nets and increase capacity through the implementation of controller support tools.”</i></p> <p> Ignores the fact that ELS and EHS are/were already mandated on aircraft by March31, 2007, so the Regulatory Approach seems to be dealing with ground based surveillance only.</p>			2.3.2.2	<p>Partially accepted</p> <p>The current mandate is limited to several states in the core are while the scope of the draft implementing rule is much wider.</p>	AEA/ IATA/ IACA
2.2.4.	The last bullet should also indicate the sequence of change, and that other elements are also needed for delegation of responsibility.	Avoidance of erroneous expectations, or needless conflicts.	<p>Amend the text of the last bullet, as proposed in italics:</p> <p><i>“[...] (ATSAW) and then Spacing applications, thereby also introducing part of the capability of increased delegation [...]”</i></p>	2.3.1	Accepted	Airbus
2.2.5 (Institutional Environment)	Only ICAO and ITU are mentioned! By my humble opinion, RTCA and EUROCAE have to be mentioned here! Also, question is: what about ETSI, CENELEC, etc...?	ICAO and ITU are dealing more with operations! Equipment is strictly connected end elaborated in RTCA (for USA and American countries) and EUROCAE (for European countries)! If we are speaking for interoperability we can not forget RTCA!!!!		2.3.1	<p>Partially accepted</p> <p>Introductory text inserted.</p>	FYROM, Civil Aviation Agency

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2.5.1	The text treats ICAO provisions for surveillance, but for some reason all surveillance standards aren't mentioned.	VDL Mode 4 is also standardized by ICAO for surveillance, this is shown in Annex 10 (Aeronautical Telecommunications) Volume II, Part I – Digital Data Communication Systems and in Doc 9816 (Manual on VHF Digital Link (VDL) Mode 4.		2.3.1	Accepted	Sweden, Lfv ANS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2.5.1	The purpose of the ICAO Doc7030 “EUR Regional Supplementary Procedures” is slightly different than as described in the document.	Regional Implementation rules shall account for existing provisions, global nature of civil aviation and need to ensure seamless operation for aircraft across regions. Any developments that might be to the detrimental effect for a global community shall be avoided. The need for possible refinements of the ICAO Doc7030 “EUR Regional Supplementary Procedures” shall be considered in the SPI Requirements development process.	<p>The ICAO Regional Supplementary Procedures (SUPPS) form the procedural part of the Air Navigation Plan developed to meet those needs of specific areas which are not covered in the worldwide provisions. They complement the statement of requirements for facilities and services contained in the Air Navigation Plan publications. Procedures of worldwide applicability are included either in the Annexes to the Convention on International Civil Aviation as Standards or Recommended Practices, or in the “Procedures for Air Navigation Services (PANS)”. In the development of Regional Supplementary Procedures, the following criteria is satisfied:</p> <p>a) Regional Supplementary Procedures indicate a mode of implementing procedural provisions in Annexes and PANS, Regional Supplementary Procedures may also indicate permissible additions to provisions in Annexes and PANS;.</p> <p>b) Regional Supplementary Procedures must not be in conflict with the provisions contained in the Annexes or PANS.</p>	2.3.1	Accepted	ICAO EUR/NAT

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2.2.5.1 (Cont'd)			<p>They must either specify detailed procedural regional options of those provisions or promulgate a regional procedure of justifiable operational significance.</p> <p>It would be also noteworthy to point out that Carriage and Operation of SSR Mode-S airborne equipment in airspace designated by the appropriate ATS authorities in ICAO EUR region is already mandatory for Mode S enhanced surveillance.(para 9.5.1 Doc7030 refers).</p> <p>ICAO Annex 10 Vol IV (paragraph 2.1.5 and 2.1.6 refer) provide Mode-S capability requirements on the worldwide basis. Specifically, paragraph 2.1.5.1.7.1 states that "SI code capability shall be provided for all Mode S transponders installed on or after 1 January 2003 and by all Mode S transponders by 1 January 2005." Paragraph 2.1.3.3.1 stipulates that the requirements for mandatory carriage of SSR Mode S transponders shall be on the basis of regional air navigation agreements which shall specify the airspace and the airborne implementation timescales and paragraph 2.1.3.3.2 recommends that <i>the agreements should provide at least five years' notice.</i></p>			ICAO EUR/NAT

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
2.2.5.1	The second paragraph of this section highlights the importance of back up and safety net systems. It should not be acceptable for service providers to plan to operate in a degraded mode without these safety nets.	Currently the design of many air traffic control systems requires that they go into a “degraded mode” without essential backups and safety nets for the purpose of software and data upgrades. This should not be an acceptable practice as accidents and incidents have highlighted. Service provider surveillance systems should have “fail safe” architecture but these fail safe degraded modes should not be intentionally used for planned activities such as upgrades. Although raised here under institutional environment, this needs to be addressed in another area of the proposal. It is currently not specifically mentioned elsewhere		2.3.1	Partially accepted The issue does not require an amendment of the Regulatory Approach document but will be further analysed during the safety analysis associated with the development of the draft implementing rule.	IFATCA
2.2.5.1 and 2.2.5.2	Discussions on ITU and WRC issues are not relevant to the subject of Surveillance performance and interoperability requirements.	Frequency spectrum management, protection and frequency registration issues are addressed on national and International levels within other working arrangements including ICAO EANPG frequency Management group and fell outside of this IR scope.	Delete 2.2.5.2 and last 2 paragraphs of 2.2.5.1	2.3.1	Partially accepted Introductory text inserted.	ICAO EUR/NAT
3.1	The implementation dates should take due account of the development time for all relevant Community Specifications, in particular the ones pertaining to the conformity assessment.	The definition of acceptable means of compliance should be available at the start of the applicability of the Implementing Rule.		2.3.2.10	Partially Accepted Formally, the implementing rule is not conditioned by the availability of Community Specifications	Belgium, Belgocontrol
3.1	Regarding performance paragraph (4th bullet), it is unclear whether the IR will identify specific performance requirement (1st sub bullet) or the IR will reference the “ATM Surveillance system standard Requirement” document (2nd sub bullet).		All performance requirements should be included in a unique document defined and agreed among surveillance systems experts.	2.3.2.6	Accepted	France, DSNA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
3.1	The airspace of applicability defined in the IR must take into consideration local operational environment. For instance Requirement for 3Nm or 5 Nm separations is not cost effective in some airspace below a certain traffic level.			2.3.2.13	Accepted	France, DSNA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
3.1	<p>Performance.</p> <p>Consistent separation standards are not just an issue for cross-boundary but are fundamental to all of the airspace design. Part of the purpose of the purpose of this SPI Mandate is surely to create a seamless functional performance in the whole of the airspace. This should be a minimum performance level of a 3 NM separation standard</p> <p>The requirement for Service Level Agreements needs to be clarified – who is the provider and who is the user?</p>	<p>The choice of separation standard affects airspace design, route design, etc and so determines available crossing points between systems. It is therefore not appropriate to consider that interoperability is just about the separation standard when crossing a boundary. Although separation standards are dependent on the ATM environment and acknowledging that the regulations are not to unreasonably impose on the equipment and other choices of the service providers, nevertheless it is a responsibility of the regulator to ensure that a consistent minimum functional standard is achieved. This has been the case for aircraft for many years and the different types and nature of aircraft has not precluded the specification of consistent equipment performance requirements irrespective of the aircraft type. Likewise the same should apply to service providers. In addition the monopolistic nature of current service provision is a reason for ensuring that a minimal acceptable performance is delivered.</p> <p>For example the minimum acceptable performance level for a service provider in high density airspace in Europe should be a separation standard of 3 NM. This should apply in enroute as well as terminal. This does not preclude the development of smaller separation standards but specifies a minimum functional requirement to be able to operate in the environment.</p>		2.3.1	<p>Rejected</p> <p>A performance level allowing 3 NM separation in en-route and in terminal areas would imply unjustifiable costs for the upgrade of the surveillance systems</p>	IFATCA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
3.1 (Cont'd)		<p>The equipment choices and other aspects can be selected by the service provider as desired (provided this and other functional requirements as specified by the regulator are met).</p> <p>The ICAO Concept requires that traffic flows not be constrained by national or facility boundaries. This does not mean that only when on defined routes that there will be the same separation standard but means much more. For example, significant weather diversions when many aircraft are not on published routes and need to transit some airspace at short notice should likewise not be constrained by facility boundaries. Separation standards used should not be considered as associated with a route or with a particular service provider – instead there should be a minimum separation standard for the airspace (in this case European airspace)</p> <p>In regard to Service Level Agreements, this could create considerable work. For example is each aircraft that transmits a Mode C level or an ADS-B position (that is dependant surveillance) a provider of surveillance data? The user of the data may not be known as the information is broadcast. Likewise if the service provider broadcast position information (for example as traffic information derived from the service provider's equipment) how can the service provider have a service level agreement with an unknown user?</p>				IFATCA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
Section 3.1 Section 4.2.1 Section 4.3.1 Section 4.4.2 Section 9	<p>Sections 3.1, 4.2.1, 4.3.1, 4.4.2 & 9, in particular, introduce the proposal for developing Community Specifications addressing the components/constituents of surveillance systems as well as the specific technologies.</p> <p>The role of these Community Specifications has to be clarified in regards with proposed Interoperability Rule, as well as the way they would interact with current applicable ICAO, RTCA & EUROCAE standards used as a baseline for aircraft surveillance systems' design and certification (namely ELS, EHS, ADS-B...). If these Community Specifications are identified as means of compliance to proposed Implementing Rule, these specifications have to be clearly defined and validated by all the stakeholders before "adoption". They should be submitted to consultation like the IR and ICAO/EUROCAE/RTCA standards.</p>	<p>Baselines for the development of Airborne systems are basically ICAO requirements, EUROCAE & RTCA standards. Airborne avionics capable of ELS & EHS are already certified and certification of ADS-B Out is on going.</p>		2.3.2.10	Accepted	Airbus

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3.1 bullet 1 & 5.3	<p>The text states that ‘...it is likely that no specific constituents will be identified in the rule’. However, Option 2 and Option 3 call for mandating carriage of Mode S transponders, which are considered a specific constituent.</p> <p>It should also be made clearer at 5.3 that where an option including airborne equipment is selected, that the IR must address the conformity assessment of the equipment through reference to identified EASA airworthiness processes.</p>	The concern is that the IR may neglect to show how conformity assessment of the transponders (where part of the selected option) is addressed.	<p>At 3.1 bullet 1 add:</p> <p>...it is likely that no specific constituents will be identified in the rule (except in the case where Mode S transponder carriage forms part of the selected option).</p> <p>At the end of the 3rd paragraph of 5.3 add:</p> <p>The implementing Rule will need to identify the appropriate EASA airworthiness processes that are considered acceptable to ensure interoperability.</p>	2.3.2.9	Accepted	United Kingdom, CAA/ MoD/ NATS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
3.1 bullet 4; 4.2.2 row 1	Q2.2 of the SPI Questionnaire concerning the definition of separation for various parts of the airspace on the basis of criteria was widely supported by stakeholders (according to the summary of responses). However 3.1 bullet 4 states 'The rule would not prescribe specific values for separation standards.'	The RA appears to have fallen short of the wide stakeholder support for separation to be defined for particular airspace based on criteria to be developed.	<p>Change 3.1 Bullet 4 sub-bullet 1 to read:</p> <p>The requirements on ANSPs to ensure that the surveillance systems allow the use of consistent separation minima across boundaries leading to safe and seamless operations. Criteria will be developed within the rule that will be used to identify the airspace where particular separation minima shall be used. The criteria will depend on the ATM environment as well as the traffic characteristics. The implementing rule, in its performance section, will also identify specific performance requirements applicable to the surveillance systems for the areas where 5 NM and 3 NM separations are used.</p> <p>Change 4.2.2 Row 1 'Nature of Provision' to read:</p> <p>High level requirements placed on ANSPs to set up separation minima that ensure seamless operations within defined airspace of the Single European Sky and to deploy suitable surveillance systems</p>	2.3.2.6	Partially Accepted The SPI Questionnaire was identifying two possible way forward, one of which being further developed in the draft Regulatory Approach (the responsibilities of the ANSP to set-up the separations minimas)	United Kingdom, CAA/ MoD/ NATS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
3.1 Subjects covered by regulatory provisions - Item: Safety requirements (top of page 16)	We are speaking for Safety Assessment which (I do believe) belongs to Safety Domain. Safety Assessment is already defined in ESARRs and such a requirement is obligatory!	<p>High Level Obligation should be connected with specification of provisions which will provide accurate service with high integrity, which means that fulfilment of such a implementing rule together with fulfilment of proper Safety Assessment Methodology study, will guarantee safe service!!!</p> <p>By my humble opinion, implementing rule should contain requirements for availability, accuracy, integrity and continuity of service (CoS), which will assure (together with safety assessment!) safe service!</p>	<p>The <u>safety</u> requirements will (at least) identify the high level obligation of the Member States to ensure that the design and deployment of surveillance systems fulfil requirements for availability, accuracy, integrity and continuity of service! The safety requirements defined in ESARRs, together with the implementing rule will ensure the compliance and traceability to the essential requirement on safety as well as a harmonized approach with regard the carrying out of the safety assessment.</p> <p>Note: The BOLD text is added! Few sentences are deleted!!!!</p>	2.3.1	<p>Rejected</p> <p>The development of the draft implementing rule will aim to identify specific safety requirements. These requirements will have to be considered by the implementers in the context of their local safety assessments.</p>	FYROM, Civil Aviation Agency

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3.1 bullet 9; 4.2.2nd row, bullets 3 & 4	<p>The summary of responses to the questionnaire 2.6 concerning RF spectrum says '<i>...it was considered that the issue is much broader than the surveillance spectrum therefore it would exceed the scope of this implementing rule</i>'. However, 3.1 bullet 9 of the RA contradicts this by including spectrum protection requirements.</p> <p>Furthermore, 3.1 bullet 9 moves away from the 'black box' approach by including requirements specifically targeted at SSR/Mode S Interrogators (which would be considered as constituents).</p> <p>It is proposed that this section is removed and left to the community specifications for particular surveillance systems to address.</p>	<p>The text at 3.1 bullet 9 goes against the summary of responses and becomes too detailed and biased towards one type of system (SSR/Mode S). This is out of place in this 'black box' SPI rule.</p>	<p>It is proposed that 3.1 bullet 9 and sub-bullets are deleted. A new bullet 9 can take the following form:</p> <p>Requirements relating to spectrum protection and coordination are technology specific and will be addressed within the system specific community specifications.</p> <p>The entry at 4.2.2 Row 2 bullets 4 needs deleting (and the associated paragraph). 4.2.2 Row 2 bullet 3 can remain, but the supporting paragraph can be amended as above.</p>	2.3.2.11	Accepted	United Kingdom, CAA/ MoD/ NATS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
3.2	The procedures relating to the use of surveillance data should be included (and not specifically excluded) as procedures are the biggest issue that needs to be addressed.	The problems with the fragmentation of European ATM have much to do with the various procedures currently in practice, and so to exclude the procedures relating to the use of surveillance data or supporting the surveillance infrastructure is ignoring the most important aspect to be addressed. For example, the ability to use 3 NM separation is not a problem with the capabilities or performance of the aircraft or the ground equipment (sensors, displays, etc) but with the procedures relating to the use of the data. It is an interoperability problem if a controller on one side of a boundary has a different set of procedures to follow to the controller on the other side of the boundary. It is likewise an interoperability problem when Mode A allocations, the number of sensors, etc is done independently and not cooperatively.		2.3.1	Rejected The scope of the coverage of the implementing rule has been decided in consultation with the focal points nominated by the stakeholders. They have unanimously agreed to restrict the procedural aspect to the procedures required to ensure that the necessary level of performance of surveillance data is made available to the end user and to exclude the procedures concerning how this data is used or other procedures that support the surveillance infrastructure (e.g. allocation of Mode A codes)	IFATCA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
3.2 (Subjects outside the scope of the implementing rule) (last item on the page 17, Wind Turbine)	Wind turbine is only one of the obstacles which can spoil the surveillance signal!	I would put here word OBSTACLES instead WIND TURBINE!	<p>Obstacles. The issue of obstacles (wind turbines, high masts, cranes, etc...) is considered to have an influence on the performance of surveillance systems, even potential on those located in adjacent States. Even if this matter is sufficiently mature, as it impacts a broader scope than surveillance for ATM (e.g. maritime radars) it is proposed to address it in a wider context than the one of the SPI requirements implementing rule.</p> <p>Note: The BOLD text is added! Few sentences are deleted!!!!</p>	2.3.1	<p>Rejected</p> <p>The wind turbines are specifically identified due to the current activities taking place in this field (Wind Turbines Task Force) and following the consultation of the focal points nominated by the stakeholders</p>	FYROM, Civil Aviation Agency
4	There is no option that mention ADS-B VDL mode 4 as a possibility? Why?	The IR must take in consideration and assure that new technologies such as VDL mode 4 still is possible to use as a surveillance technique.		2.3.1	<p>Partially Accepted</p> <p>The rule will aim to be as much as possible, technology independent.</p> <p>1090ES has been determined by ICAO as the globally interoperable link of choice for ADS-B and many aircraft are already equipped with 1090ES transponders. Local implementations are allowed as long as global interoperability is assured.</p>	Sweden, LFV ANS

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4	With the information provided it's very difficult to foresee what technical implementation that is required and the impact on the individual ANSP.	The forthcoming work with the IR must be very open and flexible so it makes sure that all types of airspace can be able to exist within the community even after the IR is valid. Forced investments must be kept as limited as possible.		2.3.2.1 2.3.2.13	Accepted	Sweden, LJV ANS
4.2.2	The values of 5NM / 3NM for the separation standard are not applicable to all types of FIR, or sectors. Text should be revised to allow other possibilities Performance requirements should also be given for other separations.	Where geographical limitations exist, impeding adequate coverage, other separations might be more adequate.		2.3.2.6	Accepted	Portugal, NAV
4.2.2 Row 1; 8.2 bullet 2	8.2 mentions 'obligations to deploy surveillance systems..'; As part of the development of the IR, the criteria used to define when this obligation comes into force will need to be defined.	The questionnaire at 3.2 clearly refers to 'specific criteria'. The way the RA is worded currently could be interpreted as blanket surveillance system deployment across Europe. This is not appropriate. It makes no reference to criteria to be defined. The concern is that the development of the criteria within the IR may be overlooked.	Add at 4.2.2 Row 1 Column 2 paragraph 1: '...and to deploy suitable surveillance systems based on specific criteria. ' Change 8.2 bullet 2 to read: 'The interoperability requirements relative to the use of a common data format used when surveillance information is exchanged between systems as well as the criteria to identify when obligations to deploy surveillance systems supporting harmonized separation standards and seamless operation are applicable. '	2.3.2.13	Accepted	United Kingdom, CAA/ MoD/ NATS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
4.3.1 final paragraph	There is an implication that the provision of SI code capability is necessary to facilitate the deployment of WAM. This is not the case.	SSR transponder carriage, and preferably Mode S transponder carriage are the only prerequisites. It is proposed to redraft this paragraph to remove any ambiguity.	Therefore, this option will not only consolidate and formalize the current practices (as option 1) but will also support the MSI implementing rule and facilitate the introduction of Mode S elementary surveillance in SES airspace. In addition, mandatory carriage of Mode S transponders will facilitate the future deployment of WAM.	2.3.1	Accepted	United Kingdom, CAA/ MoD/ NATS
4.4.1	The French MoD is not in favor of option 3 that lacks clarity on the future required functionalities for aircraft equipage.	<p>The French MoD does not want a second class service based on exemptions where State aircraft airspace access depends on the congestion level. French MoD is making significant investment efforts to have its fleets fully equipped and this option 3 does not allow long term visibility on the equipage plan to carry out.</p> <p>Moreover, this option does not define whether ADS-B will simply be a supplemental means for ATC or whether ADS-B will be the only means of surveillance in designated area. As ADS-B scope of use is not clearly mentioned, the French MoD cannot commit to support option 3.</p>		2.3.2.5 2.3.2.7	Partially Accepted The particularities of the State aircraft fleets are acknowledged. Therefore the applicability to State aircraft will be specifically addressed in the draft implementing rule, based on principles similar with those in the Air-Ground Voice Channel Spacing implementing rule	France, DIRCAM
4.4.1	What "higher levels of equipage" are considered?			2.2.1 2.3.2.5	Accepted	Sweden, LFV ANS

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Page21	<p>2nd Paragraph reads <i>"The option will not only facilitate the introduction of Mode S elementary surveillance in the SES airspace but it will also allow for new technologies (e.g. ADS-B) and new functionalities (e.g. EHS) to be deployed based on common needs/criteria"</i></p> <p>Addressing EHS as new functionality, ignores EHS is already there and apparently not used.</p> <p>In the summary: <i>"Within this option [option3] it would be possible to allow more demanding requirements on the airborne capabilities in view of the deployment of new technologies/functionalities (e.g. EHS, ADS-B) depending on certain criteria. The possible identification for common criteria for imposition of such requirements would be addressed during the development of the implementing rule."</i></p> <p>Is discussing more demanding requirements on airborne capabilities, also for EHS</p>	<p><i>These comments seem to be ignoring that airlines have been investing in EHS and that this proposed implementing rule would require even more investment.</i></p>		2.3.2.2	<p>Rejected</p> <p>The proposed text aims to allow the deployment of EHS on the ground in order to use the airborne capabilities.</p> <p>It is intended to link the mandatory carriage of specific equipments to the availability of services using these equipments</p>	<p>AEA/ IATA/ IACA</p>
4.4.1, 4.4.2, 4.5	<p>If ADS-B option is chosen, amendment 81 of ICAO annex 10 should be referred as the mandate is expected to be effective a significant time after the publication of this amendment.</p>			2.3.2.5	Accepted	<p>France, DAST</p>
4.4.1, 4.4.2, 4.5	<p>If ADS-B option is chosen, amendment 81 of ICAO annex 10 should be referred as the mandate is expected to be effective a significant time after the publication of this amendment</p>			2.3.2.5	Accepted	<p>France, DSNA</p>

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
Section 5.1	The paragraph should be amended to show that a CE mark is not required on aircraft or their equipment.	There is no need for a CE mark on aircraft or their equipment.	Add a note at the end of paragraph 5.1: <i>"Note: There is no need to affix the CE mark to aircraft, their constituent parts, or their equipment"</i>	2.3.2.9	Accepted	Airbus
Section 5.2 Section 5.3	Section 7.2.2 explains that all Commercial Aircraft Operators flying in EATMN would be subject/eligible to the future Implementing Rule and would have to assess their compliance with the rule. Section 5.3 recognizes EASA airworthiness certification processes as acceptable conformity assessment procedures for EATMN aircraft & airborne constituents, but the way non-EU registered aircraft and/or aircraft without EASA design approval would assess their compliance to the future Implementing Rule is not addressed. Paragraph 5 should be amended to also show the role of safety regulators other than EASA.	A number of aircraft registered outside EASA's area of responsibility and/or without EASA design approval also operate into European airspace, such as those certified by the US FAA, and regulators from other States without European customers. The way non-European registered aircraft and/or aircraft without EASA design approval would demonstrate compliance with SES Implementing Rules has to be clarified and addressed in proposed Regulatory Approach and subsequent Implementing Rule.	Amend the text of the last paragraph of 5.3, as proposed in italics acceptable conformity [...]" or Add a new paragraph to address specifically the issue.	2.3.2.8 2.3.2.9	Accepted Explanatory paragraph introduced in Section 5 of the Regulatory Approach	Airbus
5.4	Where an option for airborne equipage is chosen and criteria concerning exemption from those carriage requirements are defined, this may impact on the detection performance of the ground surveillance equipment. This must be taken into consideration when developing the ground surveillance system conformity assessment requirements.	Concern has been raised that were ground surveillance system performance requirements set without considering the exemptions for cooperative airborne equipment carriage, then the failure to detect the exempt aircraft may lead to failure of the ground equipment to meet its detection requirements.	Add an additional paragraph at the end of 5.4 Where airborne equipment carriage and exemption criteria are developed, then the impact of the exemptions on the conformity assessment criteria of the corresponding ground surveillance systems will need to be addressed.	2.3.2.9	Accepted	United Kingdom, CAA/ MoD/ NATS

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6. ANALYSIS OF IMPLEMENTATION CONDITIONS	There is no clear picture about possibility some Regulator to allow implementation of surveillance system which is not complying with Implementation Rule!!!	ICAO allows having system, equipment or procedure different from SARPs! They are defined as Differences from ICAO and they are published in AIP GEN 2.9 (as I remember!!!) Will Europe allow such a possibility???	Clarify this issue!!!!!!!!!!!!	2.3.2.13	Accepted	FYROM, Civil Aviation Agency
6.1	ICAO requirement for 5 years notification period for mandatory carriage shall be respected.	Airspace users shall be allowed sufficient time to retrofit existing fleet.	ICAO requirement for 5 years notification period for mandatory carriage shall be respected in accordance with ICAO Annex 10 Volume IV paragraph 2.1.3.3.2.	2.3.2.13	Accepted	ICAO EUR/NAT
6.3	This paragraph is entitled 'Criteria for Exemption' and would benefit from re-drafting.	The existing text discusses both applicability criteria and exemptions policy. It is recommended that the use of exemption be kept to a minimum. It is further recommended that the text be split into two separate paragraphs.	6.3 Applicability Criteria By default, the implementing rule will be applicable to the surveillance systems and constituents within the EU Member States, in the airspace of the EUR and AFI ICAO regions where the states have the responsibility to provide air navigation services. Depending on the chosen option and the impacted stakeholders this applicability may be reduced for some of the requirements and/or could be subject to a phased approach. This "reduction" in scope may apply to both the ground and the airborne systems, depending on the options that will be selected for the development of the implementing rule.	2.3.1	Accepted	United Kingdom, CAA/ MoD/ NATS

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6.3 (Cont'd)			<p>With regard to the requirements addressing the ground systems, various applicability criteria may be considered. They could address several requirements (but not limited to) as follows:</p> <ul style="list-style-type: none"> - The interoperability requirement relative to the use of a common data format should apply only when the surveillance data is exchanged between surveillance systems and not when the data "remains" within the system - The performance requirements (extracted from the "ATM Surveillance system standard requirements", currently under development) are applicable only when 5 or 3 NM separations are in place. <p>If one of the options including the mandatory carriage of equipment is selected, the rule will identify the criteria on which aircraft will have to comply with the equipage requirements. These criteria for may address:</p> <ul style="list-style-type: none"> - The class of flight to which the rule will apply (e.g. only those aircraft operating as GAT under instrument flight rules) - The class of aircraft to which the rule will apply (e.g. only those aircraft above a certain maximum take-off mass) 			United Kingdom, CAA/ MoD/ NATS

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
6.3 (Cont'd)			<p>- The types of airspace in which the flights will take place (e.g. en-route, above a certain flight level or in certain FIRs)</p> <p>6.4 Exemption Procedures</p> <p>In principle, the implementing rules should seek to minimize the number of exemptions. However, it is recognized that exemption procedures may apply to those aircraft that fall within the applicability criteria but which have a genuine need to be temporarily or permanently exempted from compliance within the implementing rule (e.g. aircraft approaching the end of their lifecycle, test, delivery and maintenance flights). In addition, there may be a necessity to allow some specific exemptions to the State aircraft that fall within the applicability criteria.</p>			United Kingdom, CAA/ MoD/ NATS

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6.3. (Page 25)	The first bullet point makes reference to the use of a common data system format and essentially suggests that data that is contained within 'the system' would be exempt. This is supported by the comment made in the first row and second column of the table on page 19; however this refers to a 'local system' which is a different use of terminology. This would appear to be inconsistent use of terminology, which may promote confusion and miss-interpretation.	<p>The terminology in relation to what constitutes a 'system', a 'local system' and what is internal to a system lacks clarity and requires further definition. For instance, does a system refer to a collection of constituent parts? Do these parts have to be located within close proximity of each other to be regarded as a 'local system'?</p> <p>In the absence of any clear definition, who would ultimately be responsible for resolving or providing conciliation in any subsequent dispute should interpretations differ?</p>	<p>The text on Page 25 could be amended to read:</p> <p>"The interoperability requirement relative to the use of a common data format should apply only when the surveillance data is required to be exchanged between the surveillance systems of individual ANSPs"</p> <p>The text within the table on P.19 could be amended to complement this:</p> <p>"High level generic interoperability requirements to be applied whenever surveillance data is required to be exchanged. (This would not apply to the exchange of data within the ATM systems of an ANSP)."</p> <p>This would need to be repeated as necessary throughout the remainder of the document.</p>	2.3.1	Accepted	United Kingdom, CAA/ MoD/ NATS
6.3	Geographical limitations should be considered for exemptions.	<p>Where geographical limitations exist, impeding adequate coverage, exemptions should be possible.</p> <p>Resulting limitations on service provision, i.e. applicable separations, should be defined.</p>	- The types of airspace ... (e.g. en-route, ..., or in certain sectors, or FIRs)	2.3.2.13	Accepted	Portugal, NAV

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6.3 last bullet	Specific exemptions applicable to the State aircraft are a good point. Nevertheless, it is not sufficient because these exemptions cannot be a reason to deny access to GAT controlled airspace for capacity and/or efficiency reasons.	In former exemption policy, lack of equipage has proved to be a reason to ban State aircraft because of increased workload induced.	- Specific exemptions applicable to the state aircraft that fall within the applicability criteria. Those exemptions cannot be retained as a reason to deny airspace access to State aircraft.	2.3.2.7	Partially Accepted The access of non-equipped State aircraft to GAT controlled airspace will be addressed based on principles similar with those in the Air-Ground Voice Channel Spacing implementing rule.	France, DIRCAM
7	The impact assessment ratings appear to have more to do with costs than benefits.	Under the ICAO Concept all changes to the ATM system should be the result of system-wide safety and business cases to justify them. This work has progressed to what are called performance cases and ICAO is producing a performance manual. All changes to the ATM system, including those by regulators, should result in a clear benefit to the whole ATM system. There are a number of changes where the impact is assessed as “minor impact” – however it is likely that in a collaborative decision making environment as expected in the ICAO Concept that “minor changes” may not be agreed as the benefit is not clearly established. That is urgent changes are required to ATM and only changes that significantly improve ATM performance should be done. In any case, the classification of impacts seems to have more to do with costs than an assessment of the net benefit to ATM.		2.3.2.1	Accepted	IFATCA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
7.2.5	<p>Section 7.2.2 explains that all Commercial Aircraft Operators flying in EATMN would be subject/eligible to the future Implementing Rule and would have to assess their compliance with the rule.</p> <p>Section 7.2.5 recognizes the respective roles of EASA, European NSAs and Eurocontrol in the regulatory, supervisory and certification processes, but the way non-EU registered aircraft and/or aircraft without EASA design approval would assess their compliance to the future Implementing Rule is not addressed, as well as the role of their own supervisory authorities.</p>	<p>A number of aircraft registered outside EASA's area of responsibility and/or without EASA design approval also operate into European airspace, such as those certified by the US FAA, and regulators from other States without European customers.</p> <p>The way non-European registered aircraft and/or aircraft without EASA design approval would demonstrate compliance with SES Implementing Rules has to be clarified and addressed in proposed Regulatory Approach and subsequent Implementing Rule.</p>		2.3.2.8	<p>Partially Accepted</p> <p>Explanatory paragraph introduced in Section 5 of the Regulatory Approach</p>	Airbus
7.3.1	<p>Notwithstanding the recommendation to include spectrum requirements in Para 3.1 within a community specification (see comment 3 above), the general requirement for the assignment and coordination of Frequency and Interrogator Repetition Frequencies requires some clarification.</p>	<p>The term 'internal' relating to PSR frequency and SSR IRF is not understood.</p> <p>There are currently no applicable planning rules for the assignment and coordination of these parameters.</p>		2.3.2.11	Accepted	<p>United Kingdom, CAA/ MoD/ NATS</p>

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
7.3.1	The table entitled 'Common Provisions' suggests that the use of common surveillance standards will have the resultant impact of supporting an increased capacity. This should be considered an assumption as it may not be strictly correct.	<p>The paper should recognise that in stipulating formal assessment techniques and procedure the result may mean that separation minima could consequently be made higher (i.e. 5 or 10) rather than lower (i.e. 3) to ensure consistent separation minima across boundaries. Although this will undoubtedly simplify the process, any potential increase in capacity may be off set by the possible reduction in separation minima.</p> <p>It was understood that the mandate had stipulated that a cost benefit analysis should be undertaken which would identify where the real gains would be made. As of yet the UK have not had visibility of this study.</p>	<p>Impact Statement in the Table should be amended to read:</p> <p>"This would potentially support increased capacity, ATM productivity and/or reduction in delays from the removal of this potential cause of 'bottlenecks' across international boundaries where different separation minima currently exist. However, no major 'bottlenecks' have been reported and these prescriptions may only provide benefit where there is a transition between en route and TMA airspace across an international boundary."</p>	2.3.1	Accepted	United Kingdom, CAA/ MoD/ NATS
7.3.1	The classification of "Significant Impact" for "High level requirements for the procedures to be employed for the overall assessment of the performance of surveillance systems" does not seem to be justified.	There has been no mention in the document of any major identified problems with the surveillance performance assessment and Option 1 states it "will mostly harmonize and consolidate the current practices". Why with this change in performance assessment be of "significant impact"?		2.3.1	<p>Rejected</p> <p>There would be costs of procuring and deploying suitable tools, and also manpower costs associated with their deployment in some States.</p> <p>However it should be noted that this is only a very preliminary impact assessment that will be further refined during the development of the draft rule.</p>	IFATCA

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7.3.2; 3.1 bullet 4; 4.2.2 row 2	Currently the RA hopes that the specification of data format in the IR may lead to a rationalisation of surveillance infrastructure. The RA should go further than this. It is proposed that the RA requires the definition of material in the IR that will encourage the exploration of data sharing between ANSPs in order to encourage the rationalisation of surveillance infrastructure.	Without placing obligations of ANSPs to explore data sharing opportunities, then the benefits of rationalisation of the over-subscribed European surveillance infrastructure may never be realised.	Add a further sub-bullet at 3.1 bullet 4 as follows: - The requirement to explore surveillance data sharing and exchange opportunities. At 4.2.2 row 2 add a further bullet and supporting paragraph as follows: - Exploring data exchange opportunities High-level requirements requiring suppliers and users of surveillance data to explore data sharing and exchange opportunities.	2.3.2.12	Accepted	United Kingdom, CAA/ MoD/ NATS
7.3.3 page 34 (first paragraph on top)	For the specific case of State aircraft, no exemption policy has been defined for the post 2009 period.	French MoD supports option 2 providing the exemption policy to be extended after 2009.	Replace <i>"This may require"</i> by <i>"This will require"</i> . After <i>"from this activity."</i> , add <i>"In particular, this exemption arrangements will address State aircraft mode S equipage after 2009"</i>	2.3.2.7	Accepted	France, DIRCAM
7.3.3	Carriage and operation of SSR Mode S ELS level 2's (SI Code Capable) transponders on all IFR/GAT flights"	Editorial.	Replace: Carriage and operation of Mode S EHS transponders By Carriage and operation of SSR Mode S ELS level 2's (SI Code Capable) transponders on all IFR/GAT flights"	2.3.1	Rejected The initial text is correct	Portugal, NAV

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
7.3.3	Mandatory carriage of Mode S ELS Level 2s even when not intending to operate in Mode S airspace is not appropriate at this time. It would be of more benefit to have the ground systems required to use existing Mode S capabilities	<p>The future ATM environment is going to be in constant change. In this sense the ATM system will be in a continual “transition” state as new technologies are deployed. The ATM must be designed to handle a mixed mode environment – in surveillance as much as in other areas.</p> <p>Mandatory carriage is not the only solution to the current Mode A allocation problems</p>		2.3.2.4 2.3.2.13	Partially Accepted The benefits of the new technologies are proportional with the number of quipped aircraft therefore the mixed mode operations are to be reduced as much as possible.	IFATCA
Section 7.3.3 Section 7.4	<p>Sections 7.3.3 & 7.4 explain that future Implementing rule may introduce different/additional requirements as the ones currently used as the baseline for design and certification of current airborne installation. Example of EHS is clearly identified.</p> <p>If existing airborne installations have to be updated to cope with new specific safety requirements, as anticipated through last paragraph of Section 7.4, a coordinated approach involving all stakeholders has to be put in place for the validation of the potential new applicable requirements</p> <p>Related regulatory impact assessment has to be updated accordingly. Industrial constraints and costs related to the development and the certification of new/modified aircraft installations have to be taken into account in the definition of potential mandate.</p>			2.3.2.1 2.3.2.13	Accepted	Airbus

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
7.3.4 page 34	As an aircraft operator, French MoD cannot commit to equip its fleet with ADS-B or provision for 1090ES if the relevancy of this expense is not further demonstrated.	<p>The French MoD is investing a lot to have its 1734 aircrafts fit for the new requirements related to VHF8.33kHz, mode S, P-RNAV or B-RNAV capability. It will not commit to equip with some extra capabilities as long as those upgrading programs are not completed.</p> <p>Therefore, the French MoD thinks time has not come to enforce new constraints on aircraft operators. Encouraging 1090ES and ADS-B seems wiser than stating their equipage mandatory.</p>		2.3.2.7	<p>Partially Accepted</p> <p>The particularities of the State aircraft fleets are acknowledged. Therefore the applicability to State aircraft will be specifically addressed in the draft implementing rule, based on principles similar with those in the Air-Ground Voice Channel Spacing implementing rule</p>	France, DIRCAM
7.3.4	Carriage and operation of SSR Mode S ELS level 2's (1070 ES and SI Code Capable) transponders on all IFR/GAT flights"	Editorial.	<p>Replace:</p> <p>Carriage and operation of SSR Mode S ELS 'Level 2es' transponders on all IFR/GAT flights</p> <p>by:</p> <p>Carriage and operation of SSR Mode S ELS level 2's (1070 ES and SI Code Capable) transponders on all IFR/GAT flights"</p>	2.3.1	<p>Rejected</p> <p>The initial text is correct</p>	Portugal, NAV

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
7.3.4	The classification of "major impact" is inappropriate.	Work is required in improving ground systems not mandating more requirements for aircraft at this time. The impact column states that "many aircraft affected by this will already be appropriately equipped" – so why mandate for the rest? The ground system should be designed to accommodate mixed mode operations		2.3.2.2	<p>Rejected</p> <p>The current mandatory carriage of Mode S ELS is limited to few states in the core area while the draft rule will have a much wider applicability therefore for the non-equipped aircraft there may be a major impact. It is acknowledged that the benefits of the new technologies are proportional with the number of quipped aircraft therefore the mixed mode operations are to be reduced as much as possible.</p> <p>However it should be noted that this is only a very preliminary impact assessment that will be further refined during the development of the draft rule.</p>	IFATCA

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
7.4 (Safety Impact)	There is other documentation which is dealing with Safety Aspects of every system in ATM/CNS environment!	Determining the Safety Requirement in this document when in the reality we have another system for Safety Assessment is not good Regulatory Approach! Generally, one document for one rule!!!!	Delete paragraph 7.4!!!!!!!	2.3.1	Rejected As safety is one of the Essential Requirements it has to be addressed during the development of the draft implementing rule. There are well established processes set-up in order to address the safety aspects of each implementing rule for interoperability, as described in the Initial Plan.	FYROM, Civil Aviation Agency
7.5.3 page 37 second item	The 2009 timescale will be a too short term because French MoD is not only undertaking mode S transponders equipage but also VHF8.33kHz, P-RNAV or B-RNAV retrofit. This major retrofit of 1734 aircrafts will not be completed in 2009 therefore a further delay will be requested.	This exemption policy after 2009 is a key point in our option 2 acceptance.	After “with a 2009 implementation timescale.”, add “For State aircraft that will not be mode S equipped in 2009, another exemption policy will be coordinated with Eurocontrol member states.”	2.3.2.7	Partially Accepted The particularities of the State aircraft fleets are acknowledged. Therefore the applicability to State aircraft will be specifically addressed in the draft implementing rule, based on principles similar with those in the Air-Ground Voice Channel Spacing implementing rule. it should be noted that the exemptions policies will be coordinated in an SES framework.	France, DIRCAM

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§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR	Disposal	Organisation
7.5.4	Security issues are <u>only</u> mentioned in 7.5.4 for the use of ADS-B 'out' on military aircraft. It is clear that security issues related to ADS-B address all aircraft. The Implementing Rule will therefore have to address more specifically the security issues related to the use of ADS-B, for civil aircraft as well as military.			2.3.2.5	Accepted	France, DAST
7.5.4	Security issues are mentioned in 7.5.4 for military aircraft only. It is also an issue for all aircraft. Will the Implementing rule address security requirement as it has been done in the DLS implementing rule ?			2.3.2.5	Accepted	France, DSNA
7.5 last paragraph page 38	This exemption policy for State aircraft is of a primary importance. To be more exhaustive, the French Mod would have it stipulated that these exemptions granted to State aircraft cannot be a reason to deny access to a IFR/GAT controlled airspace.	In the past, exemption policies have proved to be a reason to deny access because of the increased workload induced.	After the last sentence of 7.5 paragraph, add <i>"These exemptions cannot be retained as a reason to deny access to any IFR/GAT controlled airspace."</i>	2.3.2.7	Partially Accepted The access of non-equipped State aircraft to GAT controlled airspace will be addressed based on principles similar with those in the Air-Ground Voice Channel Spacing implementing rule.	France, DIRCAM
7.5.5	The percentage of flights that are military is not the critical statistic. Small numbers of nonstandard aircraft can have a significant impact on traffic flows and controllers workloads.	Non-standard operations frequently have special requirements, for example for the controller to do manual voice coordination rather than automatic coordination. Therefore even a small number of "exempt" operations can adversely affect controller workload. The ATM system needs to be designed to cope with exempt operations and carefully monitor that defined levels of design capabilities are not exceeded		2.3.2.7	Accepted	IFATCA

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7.5.5 Short to Medium term Aircraft Equipage Requirements	At the end of the paragraph It is reasonable to assume that exemptions for 'state' aircraft could be accommodated within any of the options for regulatory approach without any adverse impact on civil/military organisation and coordination."	<p>"reasonable" does not ensure us on inappropriate behaviour</p> <p>Already now we experience problems, particularly within the airspace of some nations, when military aircraft intend to overfly them and are not yet properly equipped</p>	We will favour a more strict wording that could provide us better insurance that our aircraft will not have a second class service, in particular since this exemptions will be essential for maintaining our operational capability.	2.3.2.7	Partially Accepted The access of non-equipped State aircraft to GAT controlled airspace will be addressed based on principles similar with those in the Air-Ground Voice Channel Spacing implementing rule.	NATO
7.6	The text states "large amount of aircraft are already fitted with 1090 ES capabilities".	<p>It is not accurate to state that "large amount of aircraft are already fitted with 1090 ES capabilities". As part of the Eurocontrol CASCADE Programme, Airborne Monitoring have provided data on 1090ES equipage over core Europe (Paris). This data shows that Mode-S equipped aircraft are reporting 1090ES capability, to a rate over 50%.</p> <p>However, not all are providing valid data and non is currently certified. Measured in countries outside of the Mode-S area (e.g. Scandinavia) or including other user categories (General Aviation, airport vehicles etc) would provide lower figures.</p>		2.3.2.1 2.3.2.13	Accepted	Sweden, LRV ANS
7.6	It is surprising to expect a major indirect benefit of rationalisation of interrogator infrastructure without mandating it. ANSP's should be required to meet minimum performance levels in regard to separation standards.			2.3.2.6 2.3.2.12	Accepted	IFATCA

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Chapter 8	The objectives and scope do not explain the added value of this extra implementing rule. It is not clear why the existing regulations and implementing rules are not sufficient. If additional rulemaking is needed, make it more distinct from existing rules.	If the implementing rule aims to be a more detailed description how to get these objectives realized, then changes have to be made to its description in order to make a real practicable guide out of the rule.	Put only new, additional requirements into the rule in stead of repeating partially existing ones. This, in order to avoid double use and/or confusion in what shall be done. Evaluate the need for another implementing rule.	2.3.2.2	Partially Accepted A "Justification material" will be developed as part of the final report in order show the added value of the draft implementing rule.	Belgium, CAA
Chapter 10	Listing of content of future implementing rule remains very high level.	Make the rule more detailed and be aware of double use of already existing requirements.	Put only new, additional requirements into the rule in stead of repeating partially existing ones. This, in order to avoid double use and/or confusion in what shall be done. Evaluate the need for another implementing rule.	2.3.2.2	Partially Accepted A "Justification material" will be developed as part of the final report in order show the added value of the draft implementing rule.	Belgium, CAA