

ANNEX B

TABLE OF RECEIVED COMMENTS

1. The following table details all the comments received as part of the 'Draft EUROCONTROL Specification for ATM Surveillance System Performance' Consultation and cross-refers each comment to an appropriate response within the SOR document.
2. The table headings are as follows:

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal

- a) The first column is a unique number identifying the comment.
- b) The "originator" column identifies the source of the comment.
- c) The third column is the comment number of the originator
- d) The "Type" column indicates whether the comment is General to the document or if it is specific to a particular part of the document.
- e) The "Paragraph" column cross-refers to the relevant paragraph number in the 'Draft EUROCONTROL Specification for ATM Surveillance System Performance'.
- f) The 'Comment' and 'Reason(s) for Comment' and 'Proposed Change/Text' copy exactly the textual comments as provided in the Consultation Response Sheet.
- g) The '§ SOR' column cross-refers to the relevant section of the SOR.
- h) The 'Disposal' column provides information about the way the received comment was treated.

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
1	Naviar	1	General		In general Naviar is very pleased with this comprehensive draft specification and find that it covers many short comings in the EUROCRONTROL Standard for Radar Surveillance in En route Airspace and Major Terminal Areas and will be a helpful reference document in future procurement of modern surveillance systems. We are, however, concerned about the fact that SASS C version 7 doesn't support measurements of all requirement figures in the ESASSP specification.	Concern about the SASS C version 7 lack of support of all requirement figures in the ESASSP specification		2.2.4	Noted
2	Naviar	2	Specific	ES	Naviar is missing the requirement in support of the application of 2.5 NM separation minima within 10 Nm final to busy airports.	2.5 NM separation minimum is widely used in busy airports in Europe, and authorised by ICAO Doc. 4444. ICAO, however, does not specify accuracy figures for the horizontal position error and other vital requirements for the application of the separation minimum. Therefore, national regulatory authorities have set a variety of requirements to the local ANSP's. This is an area that calls for harmonisation, and a standardised set of measurable requirements would be welcomed.		2.2.3	Noted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
3	Naviar	3	Specific	5.1.2	We are missing a statement which is present in [RD 2.] that the area covered by the surveillance system shall extend 40 NM beyond the area of responsibility (AoR).	In order to insure compliance with interoperability regulation it is needed with overlapping coverage between adjacent ATS units in order to prove that the surveillance systems supports seamless operation (seamless transfer of flights) across Europe.		-	Noted. No change, requirements already exist in ICAO EUR Doc 7030 for silent transfer
4	Naviar	4	Specific		8 seconds update interval in support of 5 NM separation, is a value that may be acceptable for legacy systems, but should be avoided in deployment of future surveillance systems, and Naviar support the statement in Annex C2 para. 2.1.1. I.e. 5 seconds.	In today's busy environment in Europe, it is essential for controllers manning feeder sectors and apply 5 NM separation minimum to have early turn detection of vectored aircrafts. Therefore acceptance of 2 missing updates will result in a 24 seconds delay before a possible turn is detected when using 8 seconds update interval. This may compromise the required separation.		2.2.7	Noted
5	Naviar	5	Specific	5.2.5	It should be specified how the across and along horizontal error shall be used to calculate the total horizontal error.			-	Accepted
6	Naviar	6	Specific	5.2.14	The described method is difficult to understand and very difficult to measure.			-	Accepted
7	Naviar	7	Specific	C-2.1.6	The RMS figures for SSR and Mode S random errors, seems to be very small compared to the requirement of 500 m. Explanatory text would be appreciated.			-	Accepted

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8	Naviar	8	Specific	C	We would like to express that the explanations are very complex and the breakdown of the requirement figures to underlying detailed measurements can lead to unnecessary effort in an attempt to verify the overall requirements.			-	Noted, Annex C is for information only.

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9	DSNA/DTI	1	Specific	1.2	Our first remark is about the traffic to keep in the data sample. We have already mentioned during a meeting that it should not be restricted to the aircraft to which the separation service is provided. For example in class D airspaces, although horizontal or vertical separation shall not strictly be provided between IFR and VFR, we keep VFR traffic in close proximity (< separation) with IFR traffic and we apply the same requirements to both IFR(s) and selected VFR(s). We keep VFR in close proximity (< separation) with IFR traffic in class D airspaces because the surveillance service is of the same importance as the separation service and traffic information based on surveillance display requires the same quality from the surveillance chain. This traffic selection complies with our operational requirement and has been validated for several years with our local regulation	This traffic selection makes it more difficult to meet some requirements, especially those related to detection per flight.	Traffic not separated but for which surveillance service is provided (as VFR in class D airspaces) and in close proximity (< separation) with separated traffic shall comply too with the requirements.	2.2.15	Noted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
10	DSNA/DTI	2	General		The requirements must be kept to the minimum required performances for the surveillance and the 3/5 NM separation services.	All the requirements will have to be fulfilled by all the surveillance systems, even the fall back systems. This means that a surveillance system as simple as a mono radar directly displayed will have to meet all the requirements.		-	Noted
11	DSNA/DTI	3	Specific		<p>5N_C-R2 and 3N_C-R2: The horizontal probability of update shall be greater than or equal to 97% per flight.</p> <p>We have tested these requirements on opportunity traffic in different TMAs provided by mono radar directly displayed:</p> <p>We noted that the global requirement is always fulfilled but the probability of update per flight is lower than 97% for a few aircraft.</p> <p>The cases we met could come from transponder problems, VFR in close proximity with IFR or other special causes. Even if some flights can be removed of statistics (transponder problems), we think that some instances will remain.</p>		<p>Because the ANSP's experience related to 'per flight' measurements is very rare, not to say non-existing, we suggested in October 2010 (SSTF 19) keeping 'per flight requirements' as recommended requirements rather than mandatory requirements.</p> <p>This option was not agreed and to cope with this issue, we suggest adding that an aircraft with probability of update < 97% doesn't automatically disqualify the surveillance system but each occurrence of such a situation shall be studied to explain the causes and the operational consequences to determine its acceptability.</p>	2.2.14	Accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
12	DSNA/DTI	4	Specific		<p>5N_C-R3, 3N_C-R3: ratio of missed 3D position involved in long gaps (larger than 3 maximum update intervals + 10%) less than or equal to 0.1 %.</p> <p>When we tested these requirements, the figures measured in the case of SSR monoradar surveillance, particularly with low level traffic in TMA were around 0.5%.</p> <p>We are aware that these requirements are important but a 0.1% threshold is too stringent for mono radar surveillance at low level.</p>		We suggest adopting a threshold of 0.5% for the maximum ratio of missed 3D position involved in long gaps as mandatory requirements.	-	Accepted
13	DSNA/DTI	5	Specific		<p>5N_N-R3, 3N_N-R3: ratio of missed 2D position involved in long gaps in the case of non cooperative surveillance system.</p> <p>We have no recent figures about missed 2D position involved in long gaps in the case of PSR mono-radar surveillance but we suggest increasing the threshold to at least 0.5%.</p>		We suggest adopting a threshold of 0.5% for the maximum ratio of missed 2D position involved in long gaps as mandatory requirements in the case of non cooperative surveillance system.	-	Accepted

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14	DSNA/DTI	6	Specific		<p>5N_C-R11, 5N_C-R12, 3N_C-R11, 3N_C-R12: delay requirements for providing SPI and emergency indicator and for providing change of aircraft identity.</p> <p>· During the last meeting (SSTF 21), it was concluded that a containment value of 95 % for the duration for providing SPI and emergency indicator and for providing change of aircraft identity was not appropriate, because a significant proportion of the cases (5 %) may be above the containment value.</p> <p>· The same thresholds available for a containment value of 95% (SSTF 0.33) become applicable for a containment value of 100% (from SSTF 0.34): we think that these requirements became too stringent and aren't consistent anymore with the probability of update requirements.</p> <p>For instance, the end to end maximum delay for providing SPI and emergency indicator for 5 NM separations is 12s.</p>		<p>For 5N_C-R11, 3N_C-R11: delay requirements for providing SPI and emergency indicator: this delay is dependent on probability of update and a requirement is already defined for probability of update. Furthermore, as it was noticed previously, these events are very rare and a specific performance monitoring will required specific tests: so we suggest changing these requirements as design requirements.</p> <p>For 5N_C-R12 and 3N_C-R12: cf. form n°7.</p>	2.2.16	Accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
					<p>The threshold justification in annex F of 12s for SSR mono-radar is that the change should be less than 10 seconds in 95 % of the cases (97 % (Hor Pos) x 98 % (Mode A) = 95% globally over the maximum Range): 8 seconds maximum update interval + 2 seconds maximum processing delay. 2 additional seconds are added.</p> <p>· But in the case of a miss, the next update will occur 8 seconds later, so 100% of the emergency/SPI reports will not be displayed after 12 seconds.</p> <p>· This threshold isn't compatible with mono-radar surveillance architecture with 8 seconds update interval.</p> <p>To cope with this issue, if a containment value is not appropriate, the thresholds shall be dramatically increased because these durations are dependent on probability of update.</p>				

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15	DSNA/DTI	7	Specific		5N_C-R12, 3N_C-R12: delay requirements for providing change of aircraft identity. This delay is defined as the time between changing the aircraft identity on board the aircraft and availability of the new value at the output of the surveillance system but there is no way to measure the delay on board. So the real measurement will be the time between detecting the change at sensor level and availability of the new value at the output of the surveillance system. We suggest adopting a requirement on a measurable delay.		We suggest defining the delay for providing change of aircraft identity as the time between detecting the very first change at sensor level and availability of the new value at the output of the surveillance system.	2.2.16	Accepted
16	DSNA/DTI	8	General		Requirements defined without containment value are available for 100% of the cases. But an occurrence of non conformity should not automatically disqualify the surveillance system: each occurrence of such a situation should be studied to explain the causes and the operational consequences to determine its acceptability.		Note 9 p 45 explains that non conformity occurrence may not invalidate automatically the performance of the surveillance system. We suggest adding this note to each requirement available for 100% of the cases and each requirement available per flight.	2.2.14	Accepted
17	Bundeswehr	1	General		The radar systems used by the Bundeswehr for air traffic purposes are primarily non-cooperative ones. Cooperative systems are only employed to provide support.			-	Noted

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18	Bundeswehr	2	Specific	C-2.2.1	In the "Performance requirement statement/comment" field, a distinction is made between separation values of 1000 ft and 2000 ft, in the "requirement threshold" field, the only separation value entered is that of 1000 ft (cf. C-2.1.1 5N_C-R1 [RD 18] § 6.3.3.			-	Accepted
19	BAF	1	Specific	ES	To give a relation to SPI IR supposes that this Eurocontrol Specification will become a Community Specification. The matters to refuse this Eurocontrol Spec are based on regulatory items.	Community Specifications drawn up by Eurocontrol may only cover matters of operational coordination between air navigation service providers. (Article 4 (1b), Regulation (EC) No. 552/2004, amended by Regulation (EC) No. 1070/2009) Therefore the presented specification should not have been developed by Eurocontrol.		2.2.2	Rejected
20	BAF	2	Specific	2.1.2	Article 8 (1), Regulation (EC) No. 549/2004 describes, that Implementing Rules are developed by Eurocontrol or, where appropriate from another body.	Article 8 (1), Regulation (EC) No. 549/2004 amended by Regulation (EC) No. 1070/2009	Delete "based on drafts by Eurocontrol" or add "or another appropriate body"	-	Accepted

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21	BAF	3	Specific	2.1.2	Next to last paragraph "As such the provisions detailed herein support the following Essential Requirements", second bullet "Ensure a defined minimum level of interoperability, for data and performance requirements, between European surveillance systems." Minimum level of Interoperability for data and performance requirements are no Essential Requirements according to Annex II, Regulation (EC) No. 552/2004.	Annex II, Regulation (EC) No. 552/2004 amended by Regulation (EC) No. 1070/2009	Delete "Essential"	-	Partially accepted (reworded to explain relation with essential requirements (cf. in Annex II Part B § 6.1 of Regulation (EC) No 552/2004)
22	BAF	4	Specific	2.2.4	In the paragraph is mentioned "quality of service". Quality of service is no part of Interoperability (no Essential Requirement). Quality of service is covered from Annex I to V, Implementing Regulation (EU) No. 1035/2011. If this Eurocontrol Spec shall become a Community Specification it may not cover quality aspects.	Annex I to V, Implementing Regulation (EU) No. 1035/2011 Eurocontrol Guidelines on conformity assessment for interoperability Regulation of the single European sky, Edition 2.0, Paragraph 2.2.3.4 (last para). Note: Regulation (EC) No. 2096 is replaced by Implementing Regulation (EU) No. 1035/2011.		-	Rejected (Quality of service is listed in Annex II Part B § 6.1 of Regulation (EC) No 552/2004)
23	BAF	5	General		If this Eurocontrol Spec shall become a Community Specification traceability matrices have to be added.			2.2.2	Rejected

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24	Boeing	1	General		EUROCONTROL Notice of Proposed Rule Making (ENPRM) 11-005 cites generic and incomplete surveillance performance requirements that are not directly recognizable by the ADS-B community.	While it is understood that the intent of this ENPRM is to remain technology- and environment-independent, it is essential that equivalent ADS-B Out performance parameters in terms of 95% NIC, NACp, NACv, SDA, and SIL be listed along with radar-driven performance parameters in terms of RMS. This is because ADS-B Out is expected to be widely used for surveillance purposes. The readers should not need to perform their derivation to arrive at the equivalent ADS-B Out performance requirements, especially for a mandated function.	Boeing recommends that performance requirements be expressed in terms of industry-recognized ADS-B parameters (e.g., 95% NIC, NACp, NACv, SDA, SIL) where applicable in order to clarify the minimum requirements to meet the 3 NM / 5 NM safety case.	2.2.17	Rejected
25	Boeing	2	General		The ENPRM in various places states that the requirements for horizontal track errors be no greater than 4 m/s RMS for straight flight and no greater than 8 m/s RMS for turning flight. However, no derivation with respect to the relationship between these requirements and the minimum ADS-B Out velocity accuracy parameter NACv is provided.	NACv is specified in 95% terms, not on a RMS basis. It is also specified as a single value for all phases of flight. It is unclear if one or more NACv will need to be evaluated for compliance with this specification. ADS-B Out is expected to be widely used for surveillance purposes. The readers should not need to perform their derivation to arrive at the equivalent ADS-B Out performance requirements, especially for a mandated function.	Boeing recommends that performance requirements be expressed in terms of industry-recognized ADS-B parameters (in this case, 95% NACv) in order to clarify the minimum requirements to meet the 3 NM / 5 NM safety case. In addition, the requirement should also state whether the velocity accuracy requirement is applicable to all phases of flight.	2.2.17	Rejected

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26	Boeing	3	General		The numerical definition of the Horizontal Position Outlier Criteria is unclear in terms of the probability associated with the actual position exceeding a certain value.	Horizontal Position Outlier Criteria is used throughout the document but is not defined in terms of the probability of exceeding the outlier criteria value. Typical probabilistic relationship has been used in the navigation and the surveillance community and should be used in this document as well.	Boeing recommends that the numerical probability relationship between Horizontal Protection Limit (HPL), which is a 10 ⁻⁷ per flight hour radius of containment value, and the Horizontal Position Outlier Criteria be defined per industry practice.	2.2.21	Rejected
27	Boeing	4	Specific	A-2	Figures 28 and 29 are generally correct, but could be modified for accuracy.	Figures 28 and 29 show that ADS-B Out uses the same 1030/1090 MHz frequency pair as the Mode S surveillance system. However, ADS-B Out only uses the 1090 MHz frequency in Europe.	Boeing recommends that the figures be modified in such a way that they do not imply ADS-B Out will be used over frequencies other than 1090 MHz.	-	Accepted

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28	ERA	1	Specific	3.4.3	No surveillance system is able to achieve the 5N_C-R12 performance requirement as it is specified, i.e with a probability of 100%. This is also demonstrated in the Conformity Assessment of Specific Designs in Annex – F.	Commonly accepted approach is that such performance is required with a certain probability – obviously less than 100%, sufficiently high to conform to operational needs. Assuming a mono-sensor system with an update period of 6s (according to a recommended performance in 5N_C-R1) and a processing delay of 1s, we can expect the following probability for the specific mono-sensor system design (rough estimate): - SSR mono radar system design based on ESS specs: > 98.9 % - Mode S mono radar system design based on EMS specs: > 99.4 %	Change the text in column "Mandatory performance" of the 5N_C-R12 requirement to the following text: "Less than or equal to 12 seconds in 99% cases" Alternative (assuming the delay equal to twice the Applicable update interval) : "Less than or equal to 16 seconds in 99.8% cases"	2.2.14 2.2.16	Partially accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
29	ERA	2	Specific	3.4.3	No surveillance system is able to achieve the 3N_C-R12 performance requirement as it is specified, i.e with a probability of 100%. This is also demonstrated in the Conformity Assessment of Specific Designs in Annex – F.	Commonly accepted approach is that such performance is required with a certain probability – obviously less than 100%, sufficiently high to conform to operational needs. Assuming a mono-sensor system with an update period of 4s (according to a recommended performance in 3N_C-R1) and a processing delay of 1s, we can expect the following probability for the specific mono-sensor system design (rough estimate): · SSR mono radar system design based on ESS specs: almost 98 % · Mode S mono radar system design based on EMS specs: > 98.8 %	Change the text in column "Mandatory performance" of the 3N_C-R12 requirement to the following text: "Less than or equal to 7.5 seconds in 98% cases" Alternative (assuming the delay equal to twice the Applicable update interval) : "Less than or equal to 10 seconds in 99.8% cases"	2.2.14 2.2.16	Partially accepted
30	ERA	3	Specific	3.4.3	No surveillance system is able to achieve the 5N_C-R13 performance requirement as it is specified, i.e with a probability of 100% – see the Conformity Assessment of Specific Designs in Annex – F.	Such performance is usually required with a probability less than 100% – in case of 5N_C-R13, the expected probability for mono-sensor systems can be estimated in the following range: · 99.8 % to 99.98%	Change the text in column "Mandatory performance" of the 5N_C-R13 requirement to the following text: "Less than or equal to 24 seconds in 99.8% cases"	2.2.14 2.2.16	Partially accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
31	ERA	4	Specific	3.4.3	No surveillance system is able to achieve the 3N_C-R13 performance requirement as it is specified, i.e with a probability of 100% – see the Conformity Assessment of Specific Designs in Annex – F.	Such performance is usually required with a probability less than 100% – in case of 3N_C-R13, the expected probability for mono-sensor systems can be estimated in the following range: 99.8 % to 99.95%	Change the text in column "Mandatory performance" of the 3N_C-R13 requirement to the following text: "Less than or equal to 15 seconds in 99.8% cases"	2.2.14 2.2.16	Partially accepted
32	ERA	5	Specific	3.3.3	Mono-sensor systems are not capable of achieving the 5N_C-R21 (3N_C-R21) performance requirement for Continuity, which is "probability of critical failure less than or equal to 2.5*10-5 per hour of operation". – see the Conformity Assessment of Specific Designs in Annex – F.	Probability of critical failure of 2.5*10-5 corresponds to MTBCF = 40 000 hours, which is cca 4.6 years. MTBCF requirements in standards applicable to mono-sensor systems span from 10 000 to 20 000 hours.	Change the text in column "Recommended performance" of the 5N_C-R21 and 3N_C-R21 requirement to the following text: "... less than or equal to 5*10-5 per hour of operation", which corresponds to MTBCF = 20 000 hours.	2.2.19	Rejected
33	AVINOR	1	Specific	3.1.2	Is there a planned timeframe for including other air traffic services as parallel ILS monitoring and 2.5NM horizontal separation minima?			2.2.3	Noted

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34	AVINOR	2	Specific	3.1.2	The document should also address 10NM horizontal separation minima.	10NM horizontal separation minima can be sufficient in low density airspace.	The current EUROCONTROL Specification Document for Radar Surveillance in en-Route and Terminal Areas does address 10 NM horizontal separation minima (5.1.1.1). At the other hand it does not specify unique requirements for 10 NM in the formulation of the requirements (5.2.3 and 5.2.4). Thus, there is an opportunity now to work out specific requirements for 10 NM horizontal separation minima.	2.2.3	Noted
35	AVINOR	3	Specific	5.2.4	Incomplete sentence: "... A possible value of this fixed delay is the average HMI processing delay as defined on . This ..."	Is the referenced definition in figure 23?		-	Accepted
36	AVINOR	4	Specific	C-2.1.12	Error in reference document (Ref column): RD 41		Error! Reference source not found. SPR 35 § 3.4.2	-	Accepted
37	AVINOR	5	Specific	C-2.2.12	Error in reference document (Ref column): RD 41		Error! Reference source not found. SPR 35 § 3.4.2	-	Accepted
38	AVINOR	6	Specific	C-2.1.14	Error in reference document (Ref column) for the proposed requirements (5N_C-R9 to 5N_C-R20) from here and forward does not match the references in Table 4.		Update references of proposed requirements according to Table 4.	-	Accepted
39	AVINOR	7	Specific	C-2.2.14	Error in reference document (Ref column) for the proposed requirements (3N_C-R9 to 3N_C-R20) from here and forward does not match the references in Table 6.		Update references of proposed requirements according to Table 6.	-	Accepted

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40	AVINOR	8	Specific	C-2.2.1	Error in the column "Requirement threshold" for RD 46: 8 s		5 s	-	Accepted
41	CAA Norway	1	General		There should be clear statements on the requirements/presumptions put on the Aircraft Domain in the cooperative surveillance systems.	It would be more clear to the reader of the document what are the requirements on the aircraft domain and what are the requirements on the ground system.	Include a table on the requirements on the aircraft domain.	2.2.11	Partially accepted
42	Skyguide	1	General		<p>We propose the status "not acceptable but would be acceptable with amendments" for the document. This is justified by the following 4 major issues.</p> <ul style="list-style-type: none"> ● need for clarification of the boundaries to which these performances must apply, and resolve the uncertainties related to the performances affecting the display segment. ● not absolute values for performances requirements (preferable to express a certain level of performance for a certain percentile of the whole population). ● some requirements need also to be expressed per flight. ● performance requirements shall apply to the whole population of aircraft within the controlled volume of airspace and not only to controlled aircraft. 			-	Noted

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43	Skyguide	2	Specific	ES	<p>"Particular attention was paid to ensuring that each performance requirement was achievable and measurable and accompanied by an associated conformity assessment process".</p> <p>Are there any evidences of this insurance about achievability ?</p>	<p>The performance figures are derived either from other "performance specifications" or from the experience of a very limited number of ANSPs. The Eurocontrol SAP did not run an assessment of the surveillance system over ECAC as it did in the past for radars. Today, there are performance figures that we don't know whether they are achievable or not. It would have been preferable to have a full SAP run before releasing these performance figures to assess their achievability.</p>	<p>Would suggest not to mention that there is insurance that performance requirements were achievable.</p>	-	Accepted
44	Skyguide	3	Specific	2.5	<p>In the list of quality of service characteristics selected, capacity is not selected, although it can have an impact on performance.</p>	<p>Capacity is an important topic for the whole performance assessment. The surveillance system shall fulfil the performance requirements up to the maximum capacity. With opportunity traffic (nominal conditions), this limit is not fully assessed. Moreover, above (or close to) the maximum capacity, some systems may have load reduction strategy (radar, RMCDE or ARTAS filtering on load criteria) which can possibly degrade the performances.</p>	<p>Clarify that the performance specifications refer to nominal conditions. For conditions reaching or exceeding the capacity limits, then performances may be degraded (to be assessed during the local safety analysis).</p>	2.2.6	Partially accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
45	Skyguide	4	Specific	3.4.2	List of optional data items: Flight status (on the ground / airborne / unknown) No performance criteria defined for flight status.	Velocity and rate of climb / descend, which are also optional items, have associated performance criteria. If flight status is displayed on the controller screen, then it has to be validated, and be assessed against a certain level of performance.	Either define performance requirements for flight status or suppress it from the list of data items.	-	Accepted
46	Skyguide	5	Specific	3.4.3	1. Requirements R8 & R9 are both related to pressure altitude "Time" AND "Coherence" categories. 2. The text mentions that "greyed" cells indicate "no need for requirements". Indeed, these cells are not greyed but contain a "-".	R8 & R9 are not coherence-related but time/delay-related. R8 & R9 are not the equivalent for altitude of R6 for position.	Check if R8 & R9 have been put in the cell "pressure altitude / coherence" by error. Change the text so that it is consistent between "greyed" and "-".	2.2.22 (1.)	1. Note clarifies that it partly addresses coherence 2. Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
47	Skyguide	6	Specific	3.4.3	Note 2: Pressure altitude correlated error is assessed through the RVSM monitoring. Is it a reason not to define a performance criteria in this document ?	Today, with the performance of the aircraft in terms of achievable rate of climb / descent and the will to quickly join upper flight levels after take-off, the vertical evolutions of the aircraft are much more critical regarding separation infringement than evolutions on the horizontal plane. This is even more critical in an RVSM airspace with 1000 ft separation. The ESASSP document does not reflect this situation, typically for correlated errors. There is a protection against correlated errors on the horizontal plane (R5 & R20), but none on the vertical plane.	Requirements for horizontal and vertical separation shall be homogeneous.	2.2.22	Partially accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
48	Skyguide	7	Specific	3.4.3	<p>SPI/Emergency Availability/Continuity/Integrity - Note 3: Data items are checked procedurally by ATCO. Emergency code can be corrupted (integrity issue). There is a doubt that this procedural check is applied systematically.</p>	<p>For SPI, requirement R12 ensures that the information is displayed within an acceptable time limit, thus there is no concern about availability (if not present, R12 becomes infinite). In addition, we can consider that there is no problem with integrity (binary value) and continuity.</p> <p>For emergency codes, requirement R12 can also be considered covering the availability aspect (if not displayed, then R12 is infinite), but it does not guarantee the integrity of the code.</p> <p>There is also a doubt that any operational procedure to check the availability / continuity / integrity is clearly established and applied. Meaning behind note 3 is unclear.</p>	<p>Integrity of the emergency indicator should be considered in a specific requirement.</p> <p>Please clarify whether note 3 is indeed a requirement to put in place an operational procedure to check the availability / continuity / integrity of SPI and emergency codes, or just a comment.</p>	-	Accepted (note clarified)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
49	Skyguide	8	Specific	3.4.3	<p>"Although requirements 5N_C-R9, 5N_C-R12 and 5N_C-R13 are defined for 100 % of the cases, it is recognised that very rare cases may present a data age or a delay greater than the specified value. The occurrence of such events may not invalidate the performance of the surveillance system provided that they have been investigated and that appropriate mitigation and risk reduction measures have been defined to avoid/reduce their re-occurrence in the future."</p> <p>Keeping absolute values is not desirable.</p>	<p>There is a discrepancy between a pure interpretation of the performance figures R9, R12 and R13 of the 3 / 5 cooperative / non-cooperative tables (criteria applies strictly to 100% of the population) and this remark (less restrictive). However, the idea of this remark is well understood: investigate these unexpected cases, which anyway do not prevent the ANSP from maintaining the same separations.</p>	<p>Specify requirements R9, R12, R13 for 99.9% (to be discussed) of the population, whilst clearly stating that the remaining 0.1% have to be investigated (in the spirit of the above referenced comment).</p>	2.2.14	Accepted
50	Skyguide	9	Specific	3.4.3	<p>Horizontal position RMS error: Less than or equal to 500 m global and less than 550 m per flight.</p> <p>Absolute requirement should be avoided (see comment n° 7).</p>	<p>The "per flight" requirement is a good thing as it avoids allowing the concentration of the errors on a few flights. However, as stated (see comment n° 7), it can happen in very rare case that the accuracy of an aircraft is above the 550 m. Although this situation is not desirable, we do not want to stop providing the service if such a case occurs. For that reason, the 550 m RMS per flight should be specified for 99.9% of the flights and the remaining 0.1% shall be investigated.</p>	<p>Less than or equal to 500 m global and less than 550 m per flight in 99.9% of the cases, the remaining 0.1% needing investigation.</p>	2.2.14	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
51	Skyguide	10	Specific	3.4.3	Pressure altitude - Probability of update with valid and correct value - Greater than or equal to 96 % global Performance criterion should be also specified per flight.	Today, with the performance of the aircraft in terms of achievable rate of climb / descent and the will to quickly join upper flight levels after take-off, the vertical evolutions of the aircraft are much more critical regarding separation infringement than evolutions on the horizontal plane. This is even more critical in an RVSM airspace with 1000 ft separation. The ESASSP document does not reflect this situation, typically for probability of update with valid and correct value. There is no protection against errors concentrated on the same aircraft. In case two aircraft are vertically separated by 1000 ft with one of them displayed with a (continuous) invalid / incorrect pressure altitude, then there is a safety issue.	Specify also a performance criterion per flight.	2.2.13	Noted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
52	Skyguide	11	Specific	3.4.3	Forwarded pressure altitude - Maximum data age - Less than or equal to 16 seconds. Absolute requirement should be avoided (see comment n° 7). Maybe not the best to drop the altitude information after 16 seconds.	Instead of specifying a requirements for 100% of the cases and to mention (remark see comment n° 7) that the requirement might not be fulfilled in some very rare case, it is preferable to specifying a requirement for 99.9% of the cases and ask the ANSPs to investigate the remaining 0.1% of the cases. It is unclear what to do if the age of the forwarded pressure altitude gets older than 16 seconds: simply drop the information ? This might not be the best choice. In some implementations, a track with no altitude is presented in all sectors. This is not desirable because it creates an additional workload for several controllers in different sectors. However, this is acceptable if a track is initialized with no altitude (which is a different case), but not if the track was confirmed with a known altitude in a specific sector. We propose an intermediate step: after an age of 16 seconds, the altitude presented to the controller should be flagged as "too old".	Express the age requirements in percentile instead of absolute value.	2.2.14	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
53	Skyguide	12	Specific	3.4.3	Forwarded pressure altitude - Ratio of incorrect pressure altitude - Less than or equal to 0.1 % Performance criterion should be also specified per flight.	Today, with the performance of the aircraft in terms of achievable rate of climb / descent and the will to quickly join upper flight levels after take-off, the vertical evolutions of the aircraft are much more critical regarding separation infringement than evolutions on the horizontal plane. This is even more critical in an RVSM airspace with 1000 ft separation. The ESASSP document does not reflect this situation, typically for probability of update with valid and correct value. There is no protection against errors concentrated on the same aircraft. In case two aircraft are vertically separated by 1000 ft with one of them displayed with a (continuous) corrupted pressure altitude, then there is a safety issue.	Specify also a performance criterion per flight.	2.2.13	Partially accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
54	Skyguide	13	Specific	3.4.3	Change in emergency indicator/SPI report - Less than or equal to 12 / 7.5 seconds Too stringent if for 100% of the cases. Absolute requirement should be avoided (see comment n° 7).	3N_C_R12: Delay less than or equal to 7.5 seconds implies the usage of radar update period around 5 sec, even in multiradar coverage (cannot guarantee that at a specified time, the radars are asynchronous). See comment n° 7 on the absolute requirements. This case is a bit different as it is not easy to assessment this requirement using opportunity traffic is not easy. But, a "design-proof" approach might show that this requirement is not achievable in 100% of the cases. This is why absolute requirements should also be avoided for this performance requirement.	Less than or equal to 12 / 7.5 seconds in 99% (to be discussed) of the cases, the remaining 1% being subject to investigation.	2.2.14	Accepted
55	Skyguide	14	Specific	3.4.3	Forwarded pressure altitude - Average data age - Less than or equal to 4 / 2.5 seconds Requirements seem achievable only if display is excluded.	2.5 seconds is a strict requirement taking into account display latency or not. 4 seconds average data age can be hardly achievable if the latency of the display has to be considered. The processing within the display and the way track updates are outputted can easily take one second or more. The remaining budget for the surveillance system (as defined in annex A-2) can be drastically reduced.	Either increase the values or specify that they do not include any budget for display latency. Consider that 2.5 seconds for 3 NM is hardly achievable even if display latency is not taken into account.	2.2.10	Partially accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
56	Skyguide	15	Specific	4.2	As the vertical separation is provided in a procedural way there is no requirement on the probability of update of pressure altitude per flight, there is only a global requirement to ensure that the system is providing correct pressure altitude regularly. What does "vertical separation done in a procedural way" mean ? Why should it prevent from having a requirement per aircraft ?	Request for clarification.		-	Partially accepted (proposed to be introduced in the future)
57	Skyguide	16	Specific	5.2.2.1	1. Subdivide reconstructed trajectory into portions of time frames of length UI. The first valid position data-item is located in the middle of an UI. + resynchro 2. Or calculate the probability of update for a given flight (PU) in accordance with Equation 2 if NT is smaller than 100 What does "resynchro" stand for ? Discontinuity between the 2 cases (less / more than 100 updates).	The transition between equation 1 (NT >= 100) and equation 2 (NT < 100) is not continuous. Lets takes the example of [NT = 90 and NR = 80] and [NT = 180 and NR = 160]. Conceptually, the "probability of update is equivalent (ratio 2 for the detections, ratio 2 for the trajectory portions). If we apply formula 2 for example 1, we get a PU of 90%, but a PU of 88.8% for example 2 with formula 1.	Please explain the meaning of "resynchro". Please check validity of equations 1 and 2.	-	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
58	Skyguide	17	Specific	5.2.8	To determine correctness of the forwarded pressure altitude, the value at the output of the surveillance system shall be compared with the value provided by the aircraft at the input of the surveillance system from which the output value is derived. "This value" is the altitude of the reference trajectory sampled at the time the target report was displayed minus the pressure altitude data age. Not clear which value it refers to.		The value at the output of the surveillance system is the altitude of the reference trajectory sampled at the time the target report was displayed minus the pressure altitude data age	-	Accepted
59	Skyguide	18	Specific	5.2.9	Stable flight means with climbing/descending speed that is lower than or equal to 300 ft/mn Which speed are we talking about ?		Stable flight means with climbing/descending speed (as measured on the reference trajectory) that is lower than or equal to 300 ft/mn.	-	Accepted
60	Skyguide	19	Specific	5.2	Although the figures have already been improved, some colleagues find them difficult to interpret.		Please comment in more details each figure.	-	Accepted (figure improved and new figure added)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
61	Skyguide	20	Specific	5.2.15	A false target report is either an outlier target report meeting the criteria defined in § 5.1.5 or a target report that does not correspond to the position of a true aircraft (no corresponding reference aircraft trajectory at this position and at that time) and that contains at least the following data items: Aircraft identity (Mode A or Aircraft Identification) Why exclude cases without mode A or ACID ?	A false target report might not contain any Mode A, ACID, or even Mode S information. All false plots shall be considered whether identity is provided or not.	Remove the identity requirement for false target report identification.	2.2.20	Rejected
62	Skyguide	21	Specific	5.2.15	A falsely confirmed track is a time (during at least 16/10 seconds for respectively 5/3 NM separation) and space (maximum the horizontal outlier criteria) correlated set of at least 3 false target reports with the same aircraft identity. Why exclude cases without stable identity ?	A falsely confirmed track might not have "stable" identity (on mode A or ACID). It might contain a succession of updates with different Mode A or ACID or no identification at all.	Please review the definition of falsely confirmed track.	2.2.20	Rejected

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
63	Skyguide	22	Specific	A-2	<p>There is a general discrepancy between Figure 27 and the rest of the document regarding the “display latency” issue.</p> <p>On one hand, figure 27 is very clear in defining the scope of the surveillance system. The conformity assessment point is at the output of the Surveillance Data Processing which is “in charge of providing surveillance data items”. So, there is no ambiguity here, the surveillance system does not include the display, as the display uses the surveillance data items and does not produce them.</p> <p>On the other hand, all through the document, it is specified that a budget shall be allocated for degradation introduced due to display latency (the time between the information is available for display and the time it is effectively displayed). The [performance at the output of the surveillance system] + [the degradations induced by the display] shall comply with the ESASSP performance specifications.</p>	<p>The display latency is hardly (rarely) measurable, but can only be estimated. It is not a constant value, as it may depend on the traffic load, the zoom factor, the number of labels displayed, ...</p> <p>On one hand, taking the worst case as an addition degradation budget would penalize the global performance of the surveillance system even in nominal conditions, with a high probability that the performance requirements are not met because of this over-estimated degradation budget.</p> <p>On the other hand, taking the nominal case as additional degradation budget might mask potential problems.</p>	<p>As the latency is fluctuating and not measurable, it is proposed to assess the performance of the system at the output of the “tracker” and to assess the impact of the display latency separately as a task of the local safety analysis.</p>	2.2.10	Partially accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
					<p>In § 5.2.4, it is also unclear which performance is to be considered as it is mentioned “when the updated position was delivered / displayed”. So delivered or displayed ? It is not the same...</p> <p>1. Need for homogenisation all through the document regarding the display latency issue.</p> <p>2. Considering the display latency is difficult.</p>				
64	Skyguide	23	General		<p>The reasons why some performance indicators are only “global” whereas others are “global + per flight” are unclear. In principle, most of the performance indicators should be derived into “global” and “per flight” criteria.</p> <p>In addition, there are less “per flight” requirements for indicators related to vertical separation whereas errors on position reporting in this dimension have more impact on separation infringement.</p>		<p>For homogeneity reason and to avoid the concentration of problems on a few flights, we suggest to put a requirement per flight for requirement R7, R10, R14, R15, associated to a containment value (for 99 % of the flights – to be discussed) or mention explicitly why it has been decided not to do so.</p> <p>However, requirements “per flight” will imply less data samples. Statistics (type of statistics or values) might be adapted accordingly.</p>	2.2.13	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
65	Skyguide	24	Specific	5.1.2	The conformity assessment measurements shall be performed within the volume of airspace where the corresponding application/service is supported/provided and limited to the aircraft to which the service is provided. Limiting the assessment to the aircraft to which the service is provided is not satisfactory.	It is recognised that there can be non-controlled aircraft flying within the controlled volume of airspace where a separation service is provided. These can be intruders or VFRs / military flights flying on purpose (or not, which is even worse) within this volume. In general, military aircraft flying within the controlled airspace are no more (or not yet) in exercise, not in formation, have a discrete code identification, and "civil-like" flying profiles. Thus, they can be considered as "pseudo-civil" flights.	Propose to include all aircraft flying within the volume of controlled airspace for the assessment, or to explain why this option is not chosen.	2.2.15	Rejected

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
						It is important that controllers are aware of the presence, identification and 3D position of these aircraft with the same level of performance as for the controlled aircraft. For safety reason, it is important to ensure that a non-controlled aircraft does not come too close to a controlled aircraft. It would be difficult to explain, in case of collision between a controlled aircraft and a non-controlled (and not or badly displayed) aircraft, that the aircraft was not displayed although the surveillance system was fulfilling the performance requirements.			

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
66	UK CAA	1	Specific	ES	<p>"The requirements defined in this specification are derived to the greatest extent possible from a top-down approach justifying high level requirements (e.g. Target Level of Safety TLS)." It's not clear</p> <p>-what is meant by a top down approach here and the context for which this applies</p> <p>-Disagree the association of TLS in this statement and associating the derived requirements with a TLS and a top down safety assessment approach if this is the implied message.</p>	<p>In deriving the requirements in this document, no safety assessment was carried out. As such there was no top down approach to deriving the requirements from a safety perspective and these requirements could not therefore be related to a TLS. The requirements derived are purely technical requirements that are necessary as a minimum to provide the 3NM and the 5NM separation applications. System continuity requirement derived in the document is more of a business requirement than a safety requirement, since this is concerned with a continuity of service and not necessarily with maintaining safety.</p>	Remove the statement	2.2.6	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
67	UK CAA	2	Specific	1.1	The status of the document from a safety perspective could be better defined. Whilst clarifying that meeting these requirements is not sufficient to ensure safety, what should be included is also a statement of what it does achieve, and what it means in terms of safety. It is worth clarifying that meeting these requirements mean that the fundamental technical criteria necessary for a 3NM and 5NM application is met for a given European environment and is not aimed at achieving a given target level of safety. It is a document that ensures the basic technical acceptability for a given application.	The current statements may cause some ambiguities to the readers as to what meeting with the requirement means in terms of obtaining operational acceptability and in terms of safety. Whilst the text in the 4th paragraph in the Executive summary implies that this document is designed to achieve a TLS by deriving requirements from a top down approach, the statements in the introduction seem to imply safety is not considered.		2.2.6	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
68	UK CAA	3	Specific	1.1	Whilst the current text clarifies the intentions of the document it does clarify the true relationship between this document and the SPI IR. In order to support compliance with an IR, a document needs to be a special document unlike any specification, which is formally accepted as an AMC to the IR. Suggest clarifying, the means by which this document could support the implementation of the SPI IR. -Pending acceptance as a Community Specification to the SPI IR -or an AMC that could voluntarily be applied by states in the absence of a CS if deemed acceptable by the local regulatory authorities	SPI IR is a legal document, and any compliance documents which are made in order to comply with it, requires to obtain the appropriate status in order to be able to support an IR via the processes defined by the SES regulation.		2.2.2	Accepted
69	UK CAA	4	Specific	2.1.2	Whilst we agree with most of the detail in the diagram, it is not entirely accurate. The Community Specifications don't not always have to be below an IR although CSs don't have a mandatory status. As indicated in the text boxes a CS can also be used to comply with an Essential Requirement directly or in the case where there are IRs defined for Essential Requirements, the CSs may be produced to presume compliance with an IR.			-	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
70	UK CAA	5	Specific	3.3	<p>It is not clear why the OPA scenarios and their illustration is necessary or their relevance to the derived 3NM /5NM criteria. Illustration of these scenarios does not seem to have contributed to deriving the performance criteria and the associated values. Referring to ICAO Doc 4444 is sufficient as the operational use of surveillance based horizontal separation and the operational scenarios are described in Doc 4444.</p> <p>This section has been included to demonstrate that the derived performance criteria are independent of the environment and the traffic density. It does not make the performance criteria independent of traffic density as it claims.</p> <p>The diagrams are also inconsistent with the definitions for the terms of Same, reciprocal and crossing track scenario defined in ICAO Doc 4444 section 5.4.2.1.5. for longitudinal separation.</p>	<p>The diagrams are incorrect applications of the scenarios defined in ICAO Doc 4444. The 3rd paragraph claims that "The performance requirements figures specified in this document are based on these basic OPA scenarios ". But it has not been demonstrated how the derived performance criteria was affected to take into account these various operational scenarios. If only the performance criteria were actually derived taking into account the specific operational scenarios described in the document, It would make it independent of the type of operational scenarios that are allowed in the 3NM and 5NM application such that it would be suitable to apply in any environment where these scenarios were used.</p>	<p>Suggest removal of section 3.3. Section 3.1 paragraph 3 already mentions that the 3NM and 5NM applications are specified in ICAO Doc 4444.</p>	-	Accepted (definitions corrected and scenarios moved to appendix)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
					<p>- 3.3.2 is a same track scenario and it is false to call it a crossing same track scenario as it deviates from the definition for the crossing track scenario. In a crossing scenario the aircraft cannot have an angle of zero with respect to the other.</p> <p>- 3.3.3 is a reciprocal track scenario and not a crossing track scenario. This is a misapplication of the definitions in ICAO Doc 4444. The definition crossing cannot be applied since the aircraft cannot be at a 180° angle as per the definition of crossing scenario.</p>				
71	UK CAA	6	Specific	3.4	There are several repeated sections that are common to all co-operative systems that doesn't add any benefit, that can be combined.	To avoid many repeated sections containing the same information for clarity, ease of use and to avoid unnecessary length of material.	Suggest to combine the common elements in section 3.4 and 3.5 as they are valid for all co-operative systems regardless of the type of application. These are; The OSED description, (3.4.1 & 3.5.1) Required data items (3.4.2 & 3.5.2) Mandatory and recommended performance requirements (3.4.3 & 3.5.3) The tables containing the performance criteria for 3NM/5NM can be under two sub sections under co-operative surveillance with the relevant notes mentioned underneath the table.	-	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
72	UK CAA	7	Specific	3.6	There are several repeated sections that are common to all co-operative systems that doesn't add any benefit, that can be combined.	To avoid many repeated sections containing the same information for clarity, ease of use and to avoid unnecessary length of material.	Suggest to combine the common elements in section 3.6 and 3.7 as they are valid for all co-operative systems regardless of the type of application. These are; The OSED description, (3.6.1 & 3.7.1) Required data items (3.6.2 & 3.7.2) Mandatory and recommended performance requirements (3.6.3 & 3.7.3) The tables containing the performance criteria for 3NM/5NM can be under two sub sections under co-operative surveillance with the relevant notes mentioned underneath the table.	-	Accepted
73	UK CAA	8	Specific	D-4.1	It is unnecessary to repeat text in ICAO PAN ATM document section 5.2 to define airspace classes. Much of the text in Annex D-4 is also mentioned within the main body of the document.		Suggest removing repetitions of text in ICAO Doc 4444 and including a reference instead. The other sections in the main text do not need to be repeated in annexes as well. E.g. aircraft equipage requirements in D4.4.	2.2.8	Partially accepted (moved to informative appendix)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
74	UK CAA	9	Specific	E-	Annex E is unnecessary.	There is no benefit of repeating the ATS services defined in reference documents. The industry is well aware that ICAO Air Traffic Services are defined in ICAO PANS ATM(Doc 4444) document.	Delete Annex E.	2.2.8	Partially accepted (Annex E converted in informative appendix)
75	UK CAA	10	Specific		Why are the aircraft considered in close proximity when less than 10NM for both 5NM and 3NM separations in requirement R6 in the tables? In table 6, the word non-simultaneous is missing from the requirement for false tracks. The word non-simultaneous does not make a difference to the requirement.			-	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
76	UK CAA	11	Specific	4.1	Disagree with the statement which states that the update interval is not a performance requirement but a technical parameter.... What is the definition of a "performance requirement" and a "technical parameter"?	The update period is dependent on the operational requirement since the controller needs updated information on the positions of the aircraft in order to ensure separation minima is maintained (e.g 5NM). If the separation is large the time the aircraft takes to travel is also larger, hence the update period can be slow. Hence it is a parameter dependant on the separation distance to be applied, the maximum aircraft speeds etc. It is not decided by design, but it is designed to meet the operational requirements.	Delete the statement.	-	Accepted (new term defined: measurement interval)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
77	UK CAA	12	Specific	4.2	<p>Figure 8: This is trying to demonstrate the obvious fact that the update period is an essential performance of any surveillance system, and that it is most critical when 2 aircraft cross each other at the same level, if the correct position was unknown at the time of crossing.</p> <p>Figure 9: The figure adds no benefit other than stating the obvious fact that the missing position information can be most critical when aircraft cross each other at the same level, if the correct position was unknown at the time of crossing. The terms “3 consecutive missed target reports” provides sufficient clarity to realise its consequences in various operational scenarios that may be applied within 3Nm/5NM separation applications.</p> <p>Figure 10: This figure is also highlighting the criticality of positional accuracy when 2 aircraft are meant to cross each other at the same level which is unnecessary to be illustrated in a diagram.</p>		Suggest removal of figures 8, 9 and 10.	2.2.8	Partially accepted (figures moved to an informative appendix)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
78	UK CAA	13	Specific	4.5	<p>Figure 11: Figure 11 is unnecessary as it is understandable that 3 consecutive correlated position errors will create an aircraft track that is deviated from the path of the true aircraft track, hence the danger it may cause in any type of operational scenario such as crossing or parallel routes.</p> <p>Figures 13, 14, 15: The figures are unnecessary to highlight the importance of providing the pressure altitude data in a timely manner as it is expected that the readers understand that aircraft are vertically separated based on the pressure altitude information. The text description is sufficient.</p> <p>Figure 18; The diagram is unnecessary and adds no benefit. The text description is sufficient for a reader to understand the effects of false track amongst the true tracks and the potential consequences.</p>	The diagrams do not add any value and adds unnecessary length to the document.		2.2.8	Partially accepted (diagrams moved to an informative appendix)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
79	UK CAA	14	Specific	5.1.5	<p>The definition "A valid data item means that the data item (e.g. horizontal position or pressure altitude) is provided to the user and can be used to perform the application" cannot be accepted as a valid definition for a data item validity.</p> <p>Given that these definitions are provided and applicable to both co-operative and non-cooperative systems, it appears to the reader that the outlier criteria defined therein are applicable in the context of both co-operative and non-cooperative systems.</p> <p>However Note 1 in sections 3.6.3 and 3.7.3 states that "There is not yet an agreed criteria for outlier criteria for horizontal position in case of non-cooperative systems".</p> <p>But this is not clarified in section 5.1.5.</p> <p>Given that the horizontal position performance criteria for non-cooperative systems are equal to that of the performance criteria for co-operative systems, it is not understood why the same outlier criteria is not applied for the non-cooperative systems.</p>	<p>What is meant by "and can be used to perform the application" is open for many different interpretations</p> <p>It also causes ambiguity and inconsistency with the statement that says "if an horizontal position data item presents an error greater or equal to the outlier criteria, it shall be considered non-valid and be classified as a false target" because a data item that "can be used to perform the application provided to the user" may be a false target.</p> <p>It is clear that the outliers should be excluded from valid data items. It is also clear that they are to be counted as false targets which implies that false targets should be excluded from valid targets. However the document does not make it explicitly clear whether false targets are to be excluded from valid targets. A false target may appear as a perfectly normal target report that can be used to perform the application.</p>	<p>Suggest to make the definitions common and valid to both co-operative and non-cooperative systems. If the same outlier criteria cannot be applied for non-cooperative systems, this has to be clarified to avoid readers being misled.</p> <p>Suggest this definition be reconsidered to clarify what is meant by "can be used to perform the application" and have a common and a clear approach to the inclusion or exclusion of the false targets.</p> <p>There is no performance criteria for false targets, for non-cooperative systems. However the validity of the data is common and essential for performance assessment of both co-operative and non-cooperative systems. However given that outliers and false targets are issues that affect both co-operative and non-cooperative systems, it has to be clarified whether or not to exclude false targets when counting the valid target reports for both co-operative and non-cooperative systems.</p>	-	Accepted (clearer definition of valid data item; non valid data item is equivalent to not present; belonging to the CAV is based on 3D reference position of the aircraft except for false cooperative target reports; definition of false cooperative target report improved)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
							<p>Systems can only be considered interoperable if they are capable of meeting the same performance criteria and this is the purpose of applying a common standard.</p> <p>Given that validity of data items is key in measuring performance, different applications of the term validity means that two systems are not comparable.</p> <p>The statement in section 5.1.2 "A target report without pressure altitude or with a non-valid pressure altitude shall be assessed within or outside the CAV on the basis of its horizontal position only".</p> <p>This does not, make it clear whether a target report with a missing pressure altitude or a missing horizontal position information is to be considered as a valid target report for the purposes of conformity assessment.</p>		

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
							The definition in section 5.1.5 however states that a valid data item can be a horizontal position or pressure altitude. As per this definition, target reports with pressure altitude information only or horizontal position information only, has to be taken into account for performance assessment whichever approach is used. However in the conformity assessments, it is essential that a target report contains at least the horizontal position information in order to be considered valid. Suggest a definition in the lines of A valid data item means; -A data item that contains at least the horizontal position information or that contain both horizontal position and pressure altitude information -that are not considered as outliers as per criteria xxx for all types of systems -and that are confirmed as not false targets (see definition in section yyyy		
80	UK CAA	15	Specific	5.2.1	Disagree with the statement that the update interval is merely a technical parameter, not a performance but a design feature.	See comment made on Section 4.1.		-	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
81	UK CAA	16	Specific	5.2.2	<p>The values assumed for the calculations are not what is shown in the examples. The values reflecting what is illustrated in the diagrams makes it much clear and easy to understand. This was correctly demonstrated in earlier versions (e.g. 0.33)</p> <p>Also, it states that the “verification of the horizontal position probability of update shall be performed for all flight trajectories provided that the associated target reports have a valid horizontal position data item and have 3D position located in CAV.</p> <p>This introduces a new criteria for the definition of a valid target report that was not mentioned in the definition of “valid” target reports. This is also inconsistent with the fact that target reports containing only the horizontal position information can be considered valid as per “valid” definition, the statement in section 5.1.2 and what is illustrated in Figure 19 . Figure 19 clearly takes into account the target reports that are without a pressure altitude info but with only horizontal position symbolised by a triangle, as being valid target reports.</p>	<p>The purpose of the diagrams is to illustrate by means of an example. But illustrating something inconsistent with the calculated example is not meeting the objective of having example calculations.</p> <p>To avoid inconsistency between what is defined - illustrated and; - what is described in text.</p>		-	Accepted (diagram corrected)

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
82	UK CAA	17	Specific	4.7	<p>The following comments are made in the same sheet as they are all inter-related and concerning the same issues.</p> <p>1. For co-operative surveillance systems, distinctions between the performance criteria of 3N/5N-C-R11 and 3N/5N-C-R8,9,10 have been clarified in the document. However the distinction between the 3N/5N-C-R7 and 3N/5N-C-R10 is not clarified. (The PU with valid and correct value and the ratio of incorrect pressure altitude.)</p> <p>2. The justifications for the specified performance metrics in section 4 directly relate to the exact performance metrics defined in the performance criteria tables for all data items except for pressure altitude related data items. The justification text in 4.7, and 4.8 are not titled in a way for the users to be able to relate them to the corresponding requirement for which the justification is provided.</p>	To avoid using inconsistent approaches, to include clear definitions and to seek clarification as regards the requirements, their definitions and method of calculation.	<p>1) Suggest inclusion of justification for 3N/5N-C-R7 in section 4 and the difference between R7 and R10 clarified.</p> <p>2) Suggest to make the title in section 4.7.2 is titles appropriately to reflect the corresponding requirement- Ratio of Incorrect pressure altitude.</p> <p>3) Suggest to make the title in section 4.8 is retitled appropriately to reflect the corresponding requirement –(3N/5N-C-R11 Unsigned error) for the users to be able to directly relate the justifications to the corresponding requirement.</p> <p>4) Suggest to change the title in section 4.11 to read “Probability of Update with valid and correct value of aircraft identity” to be consistent with the performance attribute.</p>	-	<p>Accepted</p> <p>1) diagram added to clarify the difference between R7 and R10 and R14 and R15)</p> <p>2) Title made consistent</p> <p>3) Title made consistent</p> <p>4) Not needed taking into account that not valid data items are considered as non present</p> <p>5) Definition of validity of data item clarified</p> <p>6/7/8) New diagram added to clarify</p> <p>9) Population clarified at the beginning of the section</p> <p>Conformity assessment procedures and criteria</p>

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
					<p>3. Sections 4.7 contains justifications for requirements 5N/3N-C-R8/9/10 and 11. However there is no justification for R7. The justification for the equivalent requirement for the aircraft identity 3N/5N-C-R14 is included in section 4.11. It is not clear why description of 3N/5N-C-R7 is omitted.</p> <p>4. It is not clear why the meaning of the probability of update for the horizontal position and the probability of update for the correct and valid data items differ according to the way they are calculated as shown in section 5.2.2.1 and 5.2.2.2.</p> <p>- why is the correctness not associated to the horizontal position and only associated to the other data items namely pressure altitude and aircraft identity?</p> <p>- The horizontal position PU is calculated with respect to the total number of expected updates (UIs), how is the PU for other data items not calculated with respect to the total expected updates, but with respect to the total updates with valid horizontal position? This does not make sense.</p>		<p>The 1st paragraph to read; "The provision of aircraft separation service is relying on the identification of the aircraft being separated valid and correct. Therefore a requirement has been defined for the probability of update of valid and correct aircraft identity of each aircraft. Preferably this quality of service should be defined per flight."</p> <p>5) Suggest amending the diagram to make the definition of the incorrect aircraft identity easy to understand.</p> <p>6) Suggest the Ratio of Incorrect Aircraft Identity is defined in section 5.2.12.</p>		

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
					<p>5. The validity and the correctness criteria for pressure altitude and aircraft identity is not correctly referred to in the foot note.</p> <p>6. Are the correctness criteria for 5.2.2.2 and for 5.2.8 the same for pressure altitude? If they are same, the only difference between the requirements 3N/5N-C-R7 and 3N/5N-C-R10 is that R7 is calculated with respect to total updates containing valid horizontal position and R10 is calculated with respect to the total number of targets including a valid pressure altitude. This does not make sense. Please provide clarification.</p> <p>7. The diagram in 5.2.12 does not clarify the definition of correct aircraft identity reflected in the text definition.</p>				

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
					8. The Ratio of Incorrect Aircraft Identity is not defined anywhere in the document (in section 4.12 or in 5.2.12). Please clarify the ratio between what parameters? The illustration in 5.2.12 only demonstrates what an incorrect aircraft identity means but it does not define how this ratio is to be calculated. (e.g; The ratio of incorrect pressure altitude is defined in section 5.2.8 as the ratio between the number of target reports including a valid and correct pressure altitude and the total number of target reports including a valid pressure altitude.)				

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
					9. Section 5.2.2.2 "Population" needs to be corrected. This note is related to the PU of aircraft ID and pressure altitude and not horizontal position. The statement "provided that the aircraft 3D position updates are valid and in the CAV" is incorrect. In order to perform this calculation the update does not necessarily need to be a 3D position update, as the updates with missing pressure altitude are also counted for NR as described in the method. The 2nd text box therefore also needs to reflect that it could be a "Target report with valid horizontal position and with valid and incorrect or missing pressure altitude."				

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
83	UK CAA	18	Specific	5.2.15	It is understood that the definition of a false target is only provided with respect to co-operative surveillance systems as there is no false target criteria derived for non co-operative systems. It is clear that a false target must contain a valid horizontal position. It is not clear whether target reports considered as valid, can include false targets. Section 5.1.5 definition for valid data item states that If a horizontal position data item presents an error greater or equal to the outlier criteria, it shall be considered as a non valid data item and be classified as a false target. This implies that no false targets (including outliers) shall be counted as a valid data item. These two definitions have to be made clear to be mutually exclusive.			-	Accepted (definitions of false cooperative target reports and valid data item have been made consistent and unambiguous)
84	UK CAA	19	Specific	5.2.6	As per the method, described in section 5.2.6, regardless of 3NM, or 5NM application aircraft are considered to be in close proximity if their horizontal positions are less than 10NM and close in time less than half the applicable time interval. It is not clear how this criterion was selected for defining "close proximity" criteria.	It is not clear how this criterion was selected for defining "close proximity" criteria and how the same proximity criteria applies to both applications.		-	Accepted (different proximity criteria defined for the different separation minima)

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
85	UK CAA	20	Specific	5.2.16	Unless there are obvious and well familiar false tracks due to nearby wind farms etc (or a dedicated flight trial where one flight where one could analyse if the system displayed a different track than the actual track of the aircraft), it is not understood how the identification of falsely confirmed tracks shall be performed independently of the tracking information provided by the surveillance system. The 2nd bullet point needs further clarification. The term "specified distance" is not clear and the rationale for +/- half the applicable update interval is not understood.	Without identifying how one could identify such false confirmed tracks, independent of the system provided information, this analysis could not be practically performed. In order to calculate this performance criteria, the method has to be clear to the readers.		-	Accepted (definition clarified)
86	UK CAA	21	Specific	3.4.3	Pressure altitude integrity –core error ; R1-R7 is wrong and has to be corrected. The basis for note 2 is not understood.	R2, 4, 5 and 6 has no link to the pressure altitude. This (note 2) implies that the pressure altitude correlated error is always assessed through RVSM monitoring. RVSM monitoring was in place when the RVSM was introduced and this monitoring is not an ongoing activity. Also RVSM monitoring and surveillance services do not share this information and it is not understood why the RVSM monitoring is applicable to this document.		-	Accepted (table corrected and note clarified)

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
87	UK CAA	22	Specific	3.4.3	We do not believe there is a necessity to define separate performance criteria for a "calculated pressure altitude". The requirements tracking table states that "However new systems could provide reliable calculated pressure altitude and a new requirement is now defined to cover this type of implementation." We are not aware of such systems that provide a calculated pressure altitude. Was this requirement included since some group members are aware of such systems or was it included only to incorporate a future possibility? It is not understood how a ground system without information from the aircraft could reliably calculate the pressure altitude the aircraft is flying at.	We are unaware that the pressure altitude is calculated by the ground surveillance systems.		-	Rejected (it might be the case in the future)
88	NATS	1	Specific	3.4.2	Coasted / non coasted (position) should not be a mandatory data item	Our policy is to send only non coasted positions to users of track data	Move bullet point to the "should" section below	-	Noted
89	NATS	2	Specific	3.5.2	Coasted / non coasted (position) should not be a mandatory data item	Our policy is to send only non coasted positions to users of track data	Move bullet point to the "should" section below	-	Noted
90	NATS	3	Specific	3.6.2	Coasted / non coasted (position) should not be a mandatory data item	Our policy is to send only non coasted positions to users of track data	Move bullet point to the "should" section below	-	Noted
91	NATS	4	Specific	3.7.2	Coasted / non coasted (position) should not be a mandatory data item	Our policy is to send only non coasted positions to users of track data	Move bullet point to the "should" section below	-	Noted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
92	NATS	5	Specific	4.5	Typo "on the an extrapolation of the future situation"	Typo	"on the extrapolation of the future situation"	-	Accepted
93	NATS	6	Specific	5.2.2.1	2nd bullet: "...in the middle of a UI. + resymichro"	Rogue text?	Delete "+ resymichro"	-	Accepted
94	NATS	7	Specific	5.1.6	There are no recommendations for pressure altitude data items other than staleness (data age greater than the specified value)	The focus is of this document is on horizontal position errors yet vertical track errors are at least of equal importance.	Add bullet for errors in pressure altitude data items	-	Accepted
95	NATS	8	Specific	5.2.4	1st paragraph: "Figure 22 above"	Typo	"Figure 22 below"	-	Accepted
96	NATS	9	Specific	D-2.7	Organism	Typo	Change to "Organisation"	-	Accepted
97	NATS	10	Specific	H-1	References to RD48 and RD14 need to be improved as it is very hard to find these documents.	The arguments presented in Annex H are technical in nature and require knowledge of the discussions within the referenced documents to fully appreciate them.	Suggest update the references section to include links to these documents where possible.	-	Accepted
98	NATS	11	Specific	H-2	NATS has much experience of modelling error distributions, it is noted that equation 12 was the best model we could achieve in 2006, however it is not the current NATS thinking. The Gaussian nature of the core distribution cannot be disregarded (especially when considering MRT systems), thus a Gaussian-mixed exponential distribution is recommended.	Knowledge gained in the intervening years since the publication of the referenced model (equation 12) has shown that to fully model radar/tracker position errors a Gaussian-mixed exponential distribution needs to be used. This requires a reworking of the HOP calculations but that is not too difficult.		-	Noted (this model is given as an example and is not applicable as is)

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
99	NATS	12	Specific	H-2	The common parameter values and the relative fractions of the separation scenarios will differ for differing types of airspace. How will this be handled by operational units?	Common aircraft speeds of 400kts are applicable in en-route airspace but not TMA airspace. Similarly the frequency of use factor is different for PSR and SSR usage. TMA airspace is more congested and complex than the scenario fractions would suggest. It is unclear from the document how the variables V, Ps and Pm are utilised within the model. This must be brought out into the text!		-	Noted (this model is given as an example and is not applicable as is)
100	NATS	13	Specific	H-2	We do not see the need for the Q values, all of the analysis given in sections H3 and H4 could be undertaken without these values. Therefore we believe these to be unnecessary.		Remove Q values	-	Noted (this model is given as an example and is not applicable as is)

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
101	NATS	14	Specific	H-2	How does the proposed method deal with understanding the effects due to radar coverage and differing manoeuvring states of target traffic?	The approach is naïve and does not give any insight into effects due to radar coverage and manoeuvring states of targets such biases are discussed in RD14 but do not appear in this document. These effects are crucial when trying to fully comprehend the performance of a system (especially when the system covers a large geographical area or covers differing airspace types). We would appreciate clarification of the rationale for this omission.		-	Noted (this model is given as an example and is not applicable as is)
102	NATS	15	Specific	H-2	"This equation tells us what the required the critical..."	Typo after Equation 11	"This equation tells us what the required critical..."	-	Accepted
103	NATS	16	Specific	H-2	Scenarii	Word is not generally recognised in the English language	If the specification is to be written in English then suggest change to the more usually recognised word scenarios.	-	Accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
104	UK MOD	1	Specific	ES	Whilst I understand that the majority of this document is about horizontal radar performance, I did notice that scenarios described included 5nm and 3nm with 1000ft and 2000ft vertical separation. It is also within existing rules that controllers may, under certain circumstances apply 500ft separation – does this need recognition if we are going to take the trouble to list 1000ft and 2000ft?			2.2.18	Rejected
105	MUAC	1	Specific	2.3	The Mode S Enhanced Surveillance (EHS) performance related to DAP (Downlink Aircraft Parameters) extraction and usage should be addressed within the Standard.	1. Today EHS is used operationally by MUAC and other ANSPs. A methodology is already in place to perform detailed technical evaluation prior to the integration of a Mode S EHS sensor within the ARTAS-based MUAC Surveillance Data Processing System. 2. EHS will be more and more used in future since it is considered as a major surveillance system improvement by the OPS community.		2.2.3	Noted
106	MUAC	2	Specific	3.6	For the accuracy in horizontal position (requirement R4), the specific distinction “per flight” or on a “global” basis is not made, as it is the case for the co-operative surveillance requirement.	Specification is not clear.	Clarification needs to be discussed.	2.2.13	Accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
107	MUAC	3	Specific	5.2.2	The present concept of Probability of Update defined per aircraft (and overall for the recommended requirement) does not address the following two issues: 1. Identification of areas with detection problems. 2. In case of a tracker, the Track Initiation Delay (either caused by detection problems or by the tracker itself) could be rather high and prohibitive for operational use, whereas the performance target on the probability of Update is still being met.	For safety reasons, it is important to detect areas where the performance of the infrastructure is problematic.	Proposed action: these two issues should be addressed in future. In MUAC they have been addressed with local tools and scripts: 1. To provide the capability to display the Probability of Update on a geographical cell basis; 2. To identify abnormally high track initiation delays.	-	Partially accepted (limitation of the approach stated)
108	MUAC	4	Specific	5.3	The common requirement for time reference (Co-ordinated Universal Time) is indicated within ICAO Annex 5 "Units of Measurement to be used in Air and Ground Operations".	Justification of underlying requirement described in the second paragraph of Subchapter 5.3.	Introduce the respective relevant reference in ANNEX – B and refer to it in the text of Sub-chapter 5.3.	-	Accepted
109	MUAC	5	General		Editorial errors of diverse nature were encountered in the document: acronyms not described in Annex B3, wrong reference to SPI IR Article, textual inconsistencies, left-over draft text, non-marking of pages intentionally left blank and spelling errors.	Required for such a Specification Document.	For efficiency reasons, it is proposed to provide all these editorials at SSTF level.	-	Accepted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
110	NAV P	1	General		The way ahead in case of not achieving 100% compliance should be addressed. In case some of the requirements for 5NM are not complied with, will it automatically be considered that 5NM is not applicable? If a measured mandatory parameter is slightly lower than the required for 5 NM what will the ANSP do? Increase separation? And for existing systems? What can the regulator's position in such situation be? Shall these issues be addressed in the safety case? Are all requirements equally significant?		Included guidance for cases where 100% compliance cannot be achieved. Only keep minimum required performance values.	2.2.14	Accepted
111	NAV P	2	General		All requirements shall be measurable in a unique manner. The existing measurement tool shall be indicated. Only the measurable requirement values shall be considered. Presently only the values measured by the actual and confident tool SASS-C V6 are suitable for global PD and accuracy. For example: nowadays a problem exists for the measurement of the accuracy of single sensors out of multiple coverage. SASS-C is unable to calculate in such environment.	To avoid having different results depending on the approach used to assess conformity.	Indicate existing measurement tool.	2.2.4	Noted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
112	NAV P	3	General		The document has for the same requirement, mandatory and recommended figures. In our view only mandatory requirements shall be included.	We can imagine the impact of a recommended value on the decision of a regulator about the quality of Surveillance system. Additionally remains the idea that a recommended value of a parameter could compensate a less quality of other.		2.2.7	Rejected
113	NAV P	4	Specific	3.1	Please clarify what additional surveillance system performance requirements can be foreseen for the application of the referred services, specifically: flight path monitoring on parallel ILS approaches; flight path monitoring on final approach and vectoring of aircraft to final approach.	It is understood that for all the services addressed in this document, other requirements apply. Yet, the document states that "It is considered that this surveillance system performance is not deemed sufficient to support the following services as defined in ICAO Document 4444 [RD 1]: (...)"		2.2.3	Noted
114	NAV P	5	Specific	3.4.3	Greyed cells are mentioned but not present in table 3. The tables' column widths are not OK and prevent reading the Requirement.	Editorial.	Change text in accordance with table 3 contents. Adapt column width.	-	Accepted
115	NAV P	6	Specific	3.4.3	Change text in accordance with table 3 contents. Adapt column width.	Need for clear requirements.		-	Accepted

Consultation 11-005 on the draft EUROCONTROL Specification for ATM Surveillance System Performance (ESASSP)									
#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
116	NAV P	7	Specific	3.4.3	<p>The requirements should be for global performance and not per target.</p> <p>The probability of detection should be measured for the area and not per flight.</p>	<p>The reason to use the probability of detection per flight instead of the global probability of detection is not clear.</p> <p>In fact for dependent surveillance (ADS) the performance is per aircraft. This is also the case for Mode A (identification) and Mode C (Pressure altitude) data which are proposed to be analysed in global terms.</p> <p>This requirement will induce a careful choice of the data sample which might not be representative of the normal equipage level. Manipulation of the data set, i.e. choosing "the aircraft to which service is provided" is also required and difficult to ensure at the evaluation level. And are the one to which service is not provided not also important for the safe provision of services?</p> <p>The fact that in the last versions of this document this requirement has changed several times from global to per flight PD, shows that there is not yet enough consensus on the way ahead.</p>	<p>Change the 5N_C-R2 mandatory performance to:</p> <ul style="list-style-type: none"> • Greater than 99% global or greater than 97% per flight 	2.2.13	Rejected

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
117	NAV P	8	Specific	3.4.3	What is the "maximum update interval"? Is it the mandatory performance maximum value specified for xN_C-R1? In 5.2.2.1 is the "applicable update interval" the Update Interval defined in 5.2.1?			-	Accepted (new definition of "measurement interval")
118	NAV P	9	Specific	3.4.3	With the existing evaluation tools, SASS-C V6, it is not possible to calculate xN_CR3. It would be helpful to have for every mandatory performance item a list of available evaluation or measuring tools.	To ensure uniform compliance assessment.	Please consider this adding a list of the available evaluation or measuring tools.	2.2.4	Noted
119	NAV P	10	Specific	4.2	Why is the mandatory requirement for probability of update of the horizontal position per flight for cooperative surveillance and global for non-cooperative surveillance?			2.2.13	Accepted
120	NAV P	11	Specific	4.5	Is tracking undershoot or overshoot to be considered a "consecutive correlated horizontal position error"?	Need for clarification.		-	Noted (tracking overshoot or undershoot might be considered as correlated horizontal position error)
121	NAV P	12	Specific	4.7	What is the impact of having the mode C reported by some aircraft with a resolution of 100ft others with 25ft?	Need to evaluate.		-	Rejected (no impact)

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122	NAV P	13	Specific	4.1	This paragraph should also address the cases where the Mode A is replaced by callsign, via a Track Flight Association function, before sending to the display. Is the Track Flight Association function to be considered part of the surveillance chain?	To have a clear definition of the scope of the compliance assessment.	Consider TFC outside the scope.	-	Rejected (already clarified in Annex A)
123	NAV P	14	Specific	5.1.3	Test flights or periodic trials should also be considered.		Add provision to include test flight or trials.	-	Accepted
124	NAV P	15	Specific	5.2.8	The systems are robust to wrong pressure altitude inputs and will normally discard outliers. It is not clear whether this feature will have a negative impact in the calculation of the Ratio of incorrect forwarded pressure altitude. One example: • Flight is levelled at FL350. • A report is received with Mode C 249. • This report is not sent to the display which results in keeping FL350 displayed. With the current calculation method it seems as if sending 249 would decrease the Ratio of incorrect forwarded pressure, i.e. improve performance.	Undesirable behaviour might get better performance results.		-	Noted (as currently specified in ESASSP R7 performance will be degraded if either no pressure altitude is reported or R7 and R14 will be degraded if FL 249 is reported assuming that trajectory reconstruction has also discarded the non credible Mode C)
125	NAV P	16	Specific	5.2.10	The assertion: In these 3 cases, the delay can be calculated accurately without any approximation. Applies to which cases?			2.2.16	Obsolete

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126	NAV P	17	Specific	5.2.12	The figures are not clearly showing cases of correct and incorrect aircraft identity	Please revise and add information to the arrows ends.		-	Accepted (new diagram added)
127	NAV P	18	Specific	5.2.15	There should be a relation of the area size and the CAV size.	To cater for different environments.	Please consider having a relation of the area for counting the false targets and the CAV size. The bigger the CAV the bigger the area.	-	Rejected (it is always possible to apply more stringent requirement than the specification)
128	NAV P	19	Specific	H	Figure 50 and 55 show risk as a function of a probability Pm, which is not defined in the document. What is Pm?		Please add definition of Pm.	-	Rejected (definition already included)
129	LFV	1	Specific	3.4.3	There are a lot of requirements described that from what LFV is aware of there are no tools available for measurements of verification.	It has to be verified that SASS-C or other tool is able to verify all requirements. If not these requirements can stop the surveillance development rather than supporting and should therefore be removed.	All requirements that can't be verified with SASS-C or other tool should be removed.	2.2.4	Noted

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130	LFV	2	Specific	2.2.2	In several places in the document it's referred to Low, Medium and High density airspace. There is no clear definition in the document that clarifies the circumstances regarding when and how a sector or similar become the different types of airspace. There are references to ED161 (RD42), Preliminary Mode S CWP SSA (RD39) and possibly other sources. It would be highly desirable to instead to clearly define airspace densities in the environment definitions in Annex D. The decision on application of 3/5 NM separation minima should be left on local safety assessment	If there shall be recommendations for different types of airspace it has to be easy to apply them for different users and airspace. It also has to be defined to avoid infrastructure and requirements in airspace that don't require it. Is the document written for low density airspace and the recommendations are for medium and high? Then at least low density airspace has to be defined and the other requirements should be removed if they go beyond minimum requirements for 3 and 5 NM separation. An ATCO should always be able to apply the minimum separation of 3/5NM even at multiratings.	Either add this or remove all text regarding this and refer to that the document is written for the lowest acceptable level of surveillance for 3 or 5 NM separation independent of traffic load.	-	Rejected (requirements are independent of traffic density)

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131	LFV	3	Specific	1.2	Some of the other surveillance applications should be handled and ICAO PANSATM, Doc 4444, support 2,5NM separation.	The services mentioned will have a significant affection on the requirements that should be put on the surveillance system and its parts. Therefore it's essential how they may differ from 3 and 5 NM separation and the commonly used is 2.5 NM separation should be mentioned regarding how it, if it does, raise the requirements from 3 NM separation and there are requirements defined in ICAO PANS-ATM, Doc 4444.		2.2.3	Noted

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132	LFV	4	Specific	3.4.2	Should and recommend can not be used when setting up minimum requirements. Separate clearly "minimum requirements" from recommendations and include justification and assumptions for each recommendation (includes requirements formulated with "should") to the maximum extent possible.	If defining minimum requirements they all are shall requirement. The recommendations shall not be together with these requirements; they can be in a different document if the airspace isn't defined according to comment 2. In some countries the "soft" requirements such as "recommendations" and "should" formulations are treated differently at the national legislative level. This in turn can increase the cost imposed upon the implementers and risks opposition at the European level and below if imposed in "wrong" airspace.		2.2.7	Noted

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#	Originator	Int. #	Type	Paragraph	Comment	Reason for comment	Proposed change/text	§ SOR	Disposal
133	LFV	5	Specific	2.4	Minimum requirement for 3 and 5 NM separation and Applicability of non-cooperative surveillance in continuous provision of separation.	If there is no connection to airspace density the separation can be based on non cooperative surveillance only, but the question is what affect it would have on capacity in some parts of the airspace. If non cooperative surveillance is the minimum requirement for separation why is cooperative surveillance part of the document? From LFV point of view non cooperative surveillance have one main purpose which is loss of transponder in aircraft and not for continuously separation. In addition a non cooperative surveillance might minimize the risk for Airspace infringement		2.2.5	Noted

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134	LFV	6	Specific	A	Clarify allocation of responsibility for quality of surveillance data.	Depending on how the service is built there can be several different providers involved, including aircraft, com provider and ground S provider and it has to be very clear how the responsibility between different providers shall be handled since the introduction of recent technologies such as WAM and ADS-B has brought a number of challenges that far exceed the technical-operational level addressed by this standard. As an example if we as ground S provider use a bad value from an aircraft (Mode C or ADS-B position) and use it in our S and ATS service and the faulty values cause an accident, who will be seen as responsible?		2.2.12	Rejected

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135	LFV	7	Specific	3.3.3	Unclear boundary between SDPDS and presentation. It has to be clarified how a presentation system is involved or not in the surveillance system.	There are parts in A-2 where the presentation system is involved and shall be taken into account when verifying the service in different ways and in 3.4.3 and 5.2.4 responsibility is placed on the user / procedure to carry out an additional verification at a point well beyond the extent of the surveillance system as defined. Delay, verification by controller and so on. The presentation system shall not be part of the surveillance system and it has to be a separate requirement on that in the requirements on presentation systems if it's needed.		2.2.10	Partially accepted
136	LFV	8	Specific	1.1	If no specific local requirements exists the requirements in this document has to be sufficient for addressed services.	If not there is no reason for the document because then the technical standards available for the different technologies would be sufficient.		2.2.6	Noted
137	LFV	9	Specific	1.6	Please advise already now how this document shall be seen if there are differences and/or conflicting information between this document and ICAO documents within the same area.	It has to be clarified which document that supersedes which in this matter if there are differences. In Sweden it's likely to believe that this as well as ICAO documents can be made mandatory and differences then are very difficult to handle/explain.		2.2.9	Noted

