

	Com	ment		Comment summary	Suggested resolution	Comment is an	Comment is	EASA	EASA response
Ref.	Author	Section	Page			observation or is a suggestion	substantive	comment disposition	
1.	GAMA/ASD	General	-	This CM is foreseen as guidance to CS 27.1309. It is understood that no special condition nor CRI MoC would be required to certify applicable systems according to the CM. Could EASA please confirm? Could EASA please confirm if it is intended to make available to the public the project having been certified with net safety benefit credit to ensure level playing field?		Yes	No	Noted.	No Special Condition will be needed for small rotorcraft as the specifications contained in CS27.1309 are not changed. A CRI Means of Compliance (MoC) or a Certification Action Item (CAI) may be raised on the project to document the discussions and the agreement reached on the credit for a net operational safety benefit. The Agency will communicate on the types of systems or functions that are likely to be granted credit. It is not planned to make the list of products having taken credit from this policy public as it is a proprietary information and his owned by the applicant.
2.	GAMA/ASD	General	-	manufacturers (TSO approval) since the process seems to be oriented to TC/STC makers?	EASA to clarify why the process is not applicable to applicant for certification of ETSO parts & appliances and possibly update the CM to extend applicability to ETSO application	Yes	Yes	Disagree.	It is not planned to extend the scope of applicability to ETSO. The operational credit is assessed and provided at aircraft level. A deviation could be requested at the level of the ETSO authorisation.
3.	GAMA/ASD	General	-		, ,	Yes	Yes	Noted.	It is agreed that the installation of systems and equipment having safety benefits could be further facilitated by providing credit for the compliance demonstration for other requirements than DAL. Based on discussions with stakeholders, the Agency is looking for the next step at expending the credits to HIRF/Lightning requirements.
4.	GAMA/ASD	General	-	How will accident/incident events be managed, if found to be related to changes that benefited from Net Safety Benefit approach?		No	Yes	Noted.	No change is expected in the way Accident/incident occurrences are managed. he intent of the CM is to improve safety by facilitating the installation of systems and equipment having a net operational safety benefit. The credit will be only if there is a positive balance between the safety gains and the additional risks created by the systems. A qualitative evaluation of the operational benefits is performed for each applicant, and the Agency is transparent in publishing the policy.

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5.	GAMA/ASD	Introductio	3	insufficient to fully leverage the benefits into EASA Net Safety Benefit concept as it does not fully capture FAA Safety Continuum concept.	Greater acknowledgement of the FAA Safety Continuum and attendant policies (e.g. FAA policy: PS-ASW-27-15 Safety Continuum for part-27 normal category rotorcraft systems and equipment, PS-AIR-23-09 - System Level Verification and FAA Policy PS-ACE-23-10 - HIRF & Lightning,) that align with the EASA proposal and concept of Net Safety Benefit. Further, the NSB approach and FAA NORSEE or broader safety continuum should be harmonized to reduce any future certification issues and maximize bilateral reciprocity.	Yes	Yes	Agreed.	The Agency cannot introduce Safety continuum though a Certification Memo. It was therefore decided to initiate a Rulemaking task. The tasks RMT.0712 is ongoing and one of the objectives is to introduce proportionality (safety continuum) in the safety objective for small rotorcraft. This approval will be equivalent to the FAA PS-ASW-27-15. The FAA NORSEE policy is not recognised by EASA as we do not have the same system based on field approval in Europe. In addition, the NORSEE policy is limited in scope and could not cover for autopilot for instance. Consideration for HIRF and Lightning will be integrated in the update of this Certification Memo. This is part of the phased approach. This CM addresses the DAL allocation at aircraft/system-level and do not intent to enter in the details of compliance demonstration performed at item level such as the FAA PS-AIR-23-09 - System Level Verification.
6.	GAMA/ASD	Roadmap (and other sections)	5	approach be limited to small rotorcraft (CS-	certain CS-23 -and , CS-27 and CS-29 specifications []"	Yes	Yes	Disagree	The introduction of the net operational safety concept is done through a phased approach. The scope will be rediscussed for the future update of the CM. The intent of this first issue of the policy is to address specific concern for the lower end aircraft for which the cost of compliance is high compared to the other costs. This is becoming a limiting factor which prevent the installation of systems and equipment having safety benefits. This argument is no more valid for CS29 and CS25 products.
7.	GAMA/ASD	Problem Statement, 1st paragraph	5	enhancing equipment is jeopardised by the, often	Add "installation of" as follows:It is recognised however, that installation of safety enhancing equipment is jeopardised by the, often	Yes		Agreed.	The sentence was modified accordingly.
8.	GAMA/ASD	Problem Statement, 2 nd paragraph	5		current demonstration of compliance to CS 23.1309, CS <u>23</u> .2510 and CS 27.1309,			Agreed.	The sentence was modified accordingly.



9.	GAMA/ASD	Problem Statement	5	Safety Benefit policy in future to 27.1316 and 27.1317 is declared in the "Problem Statement Section". It is recognized that		No	Yes	Partially agreed	The Agency is working to extend the scope to cover HIRF and lightning in the new revision of the CM. The comment is partially agreed because the extension is agreed but not in this version of the CM.
10.	GAMA/ASD	Problem Statement	6	requirements may need to be adapted as well (vibration, thermal) Cumulative effect between the level of DAL reduction and HIRF & LTE levels reduction will need to be clearly addressed by the forthcoming EASA policy	EASA to extend the forthcoming steps on HIRF& LTE to other environmental requirements, as applicable. EASA to integrate the process for HIRF & LTE alleviation in the certification memo and ensure coordination of the approach with FAA.	Yes	Yes	Noted.	The extension of the scope to HIRF & LTE environmental requirements is planned to be considered in the next issue of the CM. The introduction of the NSB concept is following a phased approach.
11.	GAMA/ASD	Conditions and Scope	6	preliminary list of items?	EASA to propose an annex to the CM to provide a list of candidate items acceptable for the Net Safety Benefit policy.	Yes	No	Noted.	It was decided to focus on the risk to be addressed instead of on the equipment themselves. The Agency is reviewing annually the main risk for the different types of aircraft and operation and published in the ASR or EPAS, the safety risk portfolio. This reference enables the CM to be 'future-proof" and reduce the need to update it on a regular basis while focussing on the most relevant safety issues. The Agency will communicate on the types of systems or functions that are likely to be granted credit. It is not planned to make the list of products having taken credit



								from this policy public as it is a proprietary information and his owned by the applicant.
12.	GAMA/ASD	Conditions and Scope	6	Conditions and Scope mention CS, JAR and FAR standards, but other equivalent standards (e.g. TCCA AWM) are missing.	Add statement as follows: The proposed change is installed on single engine aeroplanes or a small rotorcraft that have the following Certification Basis (or equivalent standards):	Yes	Agreed	The sentence was modified. In addition, the word 'recognised' was added to exclude potential equivalent standard that are not recognised by EASA.
13.	GAMA/ASD	Conditions and Scope	6	This scope should be explicit in stating that the proposed change is specifically about the addition of "safety enhancing systems and equipment" as mentioned in the Introduction and EASA certification Policy sections.	Add "-The proposed change is only regarding the installation of safety enhancing systems and equipment".		Agreed	The sentence was modified accordingly.
14.	GAMA/ASD	Conditions and Scope, 3rd bullet	6	Why limit the policy to not include changes from VFR to IFR. IIMC is a main driver to accidents in small rotorcraft, so IFR capability would be beneficial. It is assumed that changes to the AMC to CS 27.1309 will not have this restriction.	Suggest that this limitation be removed.	Yes	Disagree	d. This Certification Memo is not intended to cover for a significant operational change such as enabling IFR operations on a previously VFR certified helicopter. It is correct that changes to the AMC to CS 27.1309 will not have restriction such as changes from VFR to IFR.
15.	GAMA/ASD	The Net Safety Benefit Process	6	It is unclear what process is "the standard process." This use is the first appearance of the term with no context. Is this the System Safety process? This term is too ambiguous and should be replaced with more specific terminology or context.	Replace or provide context to the term "the standard process".		Disagree	d. The sentence before give an indication of the standard process: "Guidance on how to perform an FHA is provided in EUROCAE ED-135/SAE ARP4761." The term standard process refers to the ARP4761.
16.	GAMA/ASD	The Net Safety Benefit Process	6-7	The Net Safety Benefit Process description is mainly focused on EASA side: "The Agency performs []", "The Agency assesses []". As per the CM, the Applicant will only receive the final documentation on the already taken decision and justification: "[] shared with the applicant".	The Applicant should be directly involved through the entire process by which EASA will evaluate the Application on a case by case basis: e.g. potentially providing additional information and/or explaining technical details, or asking for clarifications etc. Higher transparency and involvement in the process could be beneficial for the success of the process itself, and therefore for the overall safety benefits that will be available/implemented on the EU fleet.	Yes	No Partially agreed	

17.	GAMA/ASD	The Net Safety Benefit Process	6-7	experience and track record of the Applicant will be taken into account by EASA.	The Net Safety Benefit Process description should expressly indicate the how EASA would consider: - Applicant previous certification experience. - periodic evaluation of DOA Performances of the Applicant. - the evaluation of the potential Safety impact on the entire in-service fleet (fleet size).	Yes	No	Disagree.	The applicant previous certification experience and the DOA performance are criteria used to define the Agency level of involvement in the certification activities of the related change. This CM does not cover or change this aspect. The evaluation of the Safety impact on the entire in-service fleet could be based on the evaluation on one single aircraft.
18.	GAMA/ASD	The Net Safety Benefit Process	6	It is unclear as to the makeup of the "board" that will perform the assessment. Are the members of the "board" from a single or multiple discipline(s) / panel(s)?	Clarify the makeup of the board that will assess the applicants proposal.			Disagree.	The definition of the members of the governance Board was initially part of the CM and was removed as it is an EASA internal information. The Board will be composed at the minimum of the Project Certification Manager (PCM) of the project, the relevant system experts involved in the project (e.g avionic, flight,), the senior safety expert, Chief Expert - Avionics & Electrical Systems and the section manager and head of department of the product. Expertise from pilot, flight test engineer or operational OSD experts will be included in the evaluation. The first applications of the CM may receive an additional scrutiny. After the first approvals and when the Agency would have gain confidence in the process, the size of the Board could be reduced.
19.	GAMA/ASD	step 1	6	EASA requests indication of the size of the fleet needs to be provided Is there a bonus for a modification applied to a large fleet of aircraft and not restricted to a small amount of helicopters?		Yes	No	Noted.	The size of the fleet is not playing a critical role in the evaluation of the operational credit. It was therefore decided to delete it.
20.	GAMA/ASD	Step 1	6	how does the process provide an objective	EASA to further elaborate on the main criteria expected to be presented by the applicant	Yes	Yes	Disagree.	The most important element in Step 1 is a substantiated justification for the operational safety benefit that the proposed change would offer. The CM was written in such a way as to enable to application of the policy to a wide range of systems and equipment. It is therefore not possible to define criteria.
21.	GAMA/ASD	Step 1, first bullet	6	factor mentioned elsewhere. The	Describe how "size of the fleet' associates to the determination process. Remove fleet size as a criteria.			Agreed.	The size of the fleet is not playing a critical role in the evaluation of the operational credit. It was therefore decided to delete it. It is agreed that the operational safety benefit is the primary driver to the implementation of safety enhancing equipment.



				primary driver to the implementation of safety enhancing equipment.					
22.	GAMA/ASD	Step 1, Note	6	The note states: "This standard process should be followed until the allocation of the DAL." Per ARP4754A, the DAL assignment generally comes from the PSSA process which follows the FHA. However, a direct DAL assignment can be made based on failure condition classification in the FHA. Is this sentence actually implying a direct assignment of DAL based on failure condition classification without the consideration of architecture for DAL assignment?	Clarify if architectural credit is being taken for the DAL allocation?				For the sake of simplicity, the CM does not refer to IDAL or FDAL but use the generic term DAL. The architecture being taken for the DAL allocation remains unchanged in the context of the specific change. Depending on the project, either a direct allocation of the DAL based on failure condition classification can be done or an allocation taking into account architectural considerations (as per ARP4754A).
23.	GAMA/ASD	Step 2	7	Safety benefit as EASA requested to obtain	Step 2 of the Net Safety Benefit should consider applicability to CS 29 aircraft.	Yes	Yes	Disagree.	The introduction of the net operational safety concept is done through a phased approach. The scope will be rediscussed for the future update of the CM. The intent of this first issue of the policy is to address specific concern for the lower end aircraft for which the cost of compliance is high compared to the other costs. This is becoming a limiting factor which prevent the installation of systems and equipment having safety benefits. For specific cases, the applicant can contact the Agency.
24.	GAMA/ASD	Step 2-4	7	The guidelines for the Agency Assessment are not stated. It would be to the Agency's and the all applicants benefit to be able to consistently apply this CM, if criteria for the Agency's assessment were identified.	Clarify the criteria for the Agency's assessment.			Partially accepted.	The definition of criteria and guidelines for the Agency Assessment could be beneficial but would reduce the flexibility and ultimately limit the applicability of the NSB concept. After the application of the CM on several project, we will review the approval to see if generic criteria could be identified and provided to the applications.
25.	GAMA/ASD	Step 3	7	What is the definition of the operational safety benefit? More details will be appreciated to better assess potential candidates		Yes	No	Partially accepted.	The consideration of the operational safety benefit is the new element introduced by this Certification Memo. A system or equipment could contribute to reducing an operational risk as described in the EASA, EPAS or ASR. For example, a stabilisation system, reduce the risk of loss of control in flight. A traffic awareness system reduces the risk of collisions. During the certification, the Applicant can engage with the agency to assess if one equipment or function could be a potential candidate. The list published by the International Helicopter Safety Foundation (IHSF) can be used as guidance.

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26.	GAMA/ASD	Step 3	7	For the qualitative assessment, what are the criteria taken into account?	EASA to further elaborate on the criteria for the qualitative assessment	Yes	Yes	Partially accepted	The definition of criteria and guidelines for the Agency Assessment would reduce the flexibility and ultimately limit the applicability of the NSB concept. After the application of the CM on several project, we will review the approval to see if generic criteria could be identified and provided to the applications.
27.	GAMA/ASD	Step 4	7	In the sentence: "It is reminded that the Agency will not accept DAL D for catastrophic failure conditions. When DAL D is expected to mitigate hazardous failure conditions, additional conditions and limitations might be needed." it implicit that we are talking at system level decomposition (only one decomposition allowed) for this mentioned cases or are these potential cases the result of the future application of the proportionality (also know as safety continuum on FAA side)? Please clarify It will be helpful to indicate if there is any limitation in the application of the policy for CAT and HAZ failure conditions in a more explicit manner.	EASA to specify limitation in the application of the net safety benefit policy based on the severity of the failure conditions the change is involved in, if any.	Yes	No	Noted.	For small rotorcraft, this CM does not consider the future changes to CS27.1309 that will be introduced through the RMT.0712. It is assumed that the objectives for catastrophic is still DAL A. The note stating that "It is reminded that the Agency will not accept DAL D for catastrophic failure conditions" is not relevant. For a small aeroplane class 1. The current safety objectives for a CAT FC is DAL C. It will not be acceptable to take credit on the NSB policy to develop this system/function in DAL D.
28.	GAMA/ASD	Step 4	7	The composition of the board mentioned in the CM is not indicated. Could EASA provide more details on this board and the expected lead time for the decision to be taken.	-	Yes	No	Disagree.	The definition of the members of the Board is an EASA internal information and was not included in the CM. For information, the Board will be composed at the minimum of the Project Certification Manager (PCM) of the project, the relevant system experts involved in the project (e.g avionic, flight,), the senior system safety expert, the Chief Expert - Avionics & Electrical Systems and the section manager of the product. Expertise from pilot, flight test engineer or operational OSD experts will be included in the evaluation as well. The first applications of the CM may receive an additional scrutiny. After the first approvals and when the Agency would have gain confidence in the process, the size of the Board will be reduced.
29.	GAMA/ASD	Step 4	7	A real example could benefit to the document, especially for the notion related to credit.	EASA to provide an example to illustrate Step 4.	Yes	No	Disagree.	Certification Memorandum describe typically a process and no examples are provided.
30.	GAMA/ASD	Step 4	7	What does the one level reduction in DAL authorized by EASA become when we apply for a certification with other certification authorities?	EASA to clarify if acceptance of the policy with bilateral partners has been granted.	Yes	No	Noted.	The acceptance of the policy with bilateral partners is generally not described in a Certification Memo. The impact of the application of this CM on the validation will depend on each authority with which EASA has a

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31.	GAMA/ASD	Step 4	7	The CM has already stated that DAL can only be reduced by 1, so the statement about not accepting DAL D for Catastrophic is confusing.	Suggest removing this sentence or change it to restate only a DAL reduction of 1 is possible.	Yes		Noted.	bilateral agreement. If the foreign authority recognises the policy, there will be no impact. If the foreign authority does not recognise the policy, it can lead to an SEI. The applicant will have to comply in this case with the requirements from the foreign authority. If we take the example of a Class I small aeroplane. The objective associated to a Catastrophic failure condition would be DAL C. The application of this CM could in theory result in allocating a DAL D. The intend of the sentence was to clarify that this would not be acceptable to the Agency.
32.	GAMA/ASD	Step 4	7	Along with the justification for acceptance of the proposal will the criteria for the decision be provide in the CRI? If the applicants proposal is rejected will a similar criteria and justification be provided?	Clarify if the criteria in addition to the justification for the Agency's decision will be provided.			Partially agreed.	The Agency will justify why the credit is not provided.
33.	UK CAA	General	N/A	It is not clear whether the intent is to limit the scope of this policy to non-required equipment (i.e. giving this policy the same scope as the FAA NORSEE policy). If the intent is to limit the applicability of this policy to non-required equipment, then the overall intent is acceptable, however, it is critical that the scope limitation is specifically identified, If this policy is also intended to be applied to required systems, UK CAA comments 2 to 9 apply.	Update the text to specifically identify whether this policy extends solely to non-required equipment or whether the intent is that it can be applied to required equipment.		Yes	Agreed.	The proposed policy applies to all equipment (required and non-required). A sentence to clarify this aspect will be added in the Certification Memo.
34.	UK CAA	General	N/A	DALs are a fundamental aspect of any response to the outcome of a set of safety analyses. They directly drive the integrity of the systems and equipment they are applied to, and, as such, are directly related to safety. The facility to adjust DAL levels based on detailed safety and architectural analyses of the proposed system(s) is already provided within ED-79A/ARP4754A, and there is no information on how or if this process could be combined with ED-79A/ARP4754A. Providing an additional means of adjusting DALs that is not necessarily predicated on the same depth of safety analysis, and	 Specifically exclude the application of this process to DAL A and B systems/components Clarify the relationship this 		Yes	Disagree.	Depending on the certification basis, either the ARP4754(-) or the ED-79A/ARP4754A applies. This CM does not change the applicability of the ARPs nor the consideration of the system architecture in the allocation of DALs. The underlying consideration is that the effort in demonstrating compliance could limit the deployment of system and equipment having safety benefit. An EASA internal governance Board that will be setup to review the applications for NSB credit. The Board will provide an additional level of scrutiny and clear governance. The involvement of Head of department and Chief Expert in addition to the certification team and additional expertise for Pilot/OPS experts will ensure that decisions are appropriate. The Panel 10 expert will be informed.



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			which, apparently, could be combined with ED-79A/ARP4754A could have the potential to compromise safety if applied to systems required by the aircraft certification requirements. On that basis, for equipment that is required via the aircraft certification requirements, using the Net Safety Benefit approach to further adjust DALs is not an appropriate option for systems that are part of the mitigation strategy for Catastrophic and Hazardous failure conditions and the Net Safety Benefit process cannot be applied where the DAL is A or B.	processes.			
35. UK (CAA Gen	neral N/A	The FAA's NORSEE policy is referenced in this CM. It is noted that the FAA's NORSEE policy is aimed at Non-Required equipment (quoting from the FAA's website, the NORSEE policy applies to "Non Required Safety Enhancing Equipment addresses equipment that is not required by any Federal regulation with the intent to measurably increase aircraft safety"). A similar restriction does not seem to have been applied to this policy, which implies that its potential scope of applicability could extend to systems that have a direct impact on safety (as defined by the applicable CS).	 Specifically exclude the application of this process to DAL A and B systems/components Clarify the relationship this document has to ED-79A/ARP4754A and 	Yes	Disagree	The proposed policy will apply to all equipment (required and non-required) and a sentence to clarify this aspects will be added in the Certification Memo. This extended scope compared to the FAA's NORSEE policy is managed by a governance board and additional scrutiny.
36. UK (CAA Gen	neral N/A	There doesn't seem to be any restriction applied to how many systems within a function could have their DALs adjusted via this process, nor is there an apparent means to track this. If more than one system associated with a function has its DAL adjusted via this process, there is a possibility that the ability to appropriately mitigate identified risks could be compromised and thus the modified a/c could become non-compliant with the applicable CS. As this procedure applies STCs, there is a potential for two or more complementary STCs (e.g. STCs that apply to the navigation	Update text to either: a. Specifically exclude required equipment or b. Provide details of a means to track all the modifications for each aircraft that have used this policy in a way that is easily accessible to both certification authorities and system installers.	Yes	Disagree	A DOA cannot apply the policy alone as the change has to be classified as MAJOR. This policy does not apply to changes covered by CS-STAN or Minor changes. The potential cumulative effects at aircraft level addressed through the FHA as the Failure Conditions always refers to aircraft level effects. The credit will be recorded in a Certification Review Item (CRI) on the project.



			and communications process) to be developed by different STC organisations, each of which could adjust the DAL of the equipment they develop. This is a foreseeable situation that could result in the outcome identified above, and, if this policy is to be used for required equipment, it will be important to provide some means of tracking issues such as this.				
37.	UK CAA	General N/A	This Certification Memo is targeted at CS-23 and CS-27 aircraft. It should be noted that some CS-23 and CS-27 aircraft operate within Commercial Air Transport. It is also potentially possible for a CS-23/CS-27 aircraft to start in GA and be transferred into CAT. If this policy is applied to required equipment, its potential impact on safety may render the application of this process to CAT aircraft inappropriate.	 Specifically exclude required equipment Specifically exclude the application of this process to DAL 	Yes	Disagree	The policy aims to facilitate the installation of systems and equipment having safety benefits in the lower-end aircraft. For these products, the costs and compliance demonstration effort could represent a limiting factor. The policy is not planned to be applied for business and large aeroplanes. In any case, the governance board will review the change in its overall operational context.
38.	UK CAA	General N/A	It isn't clear how this process would interact with the processes defined in ED-79A/ARP4754A nor is that a double adjustment (one adjustment via ED-79A/ARP4754A and one via this process) would be prevented. This has the potential to compromise safety and would be a contravention of what is specified within ED-79A/ARP4754A.	 Specifically exclude required equipment Clarify the relationship this document has to ED-79A/ARP4754A and Specifically prohibit the potential to use this process to gain a further DAL adjustment if a DAL adjustment has already been granted via the ED-79A/ARP4754A processes. 	Yes	Disagree	The assessment of the cumulative effects and preventing multiple relaxations is ensured through the additional scrutiny and the governance by the board. This is documented in a CRI.
39.	UK CAA	General N/A	The final paragraph of Step 5 of the process description refers to the potential for "double counting" of the DAL adjustment as a result of combining this policy and the various activities related to software and AEH compliance demonstration. It states	Specifically exclude required	Yes	Partially agree.	An EASA internal governance board that will be setup to review the applications for NSB credit. The board will provide an additional level of scrutiny and clear governance. The involvement of Head of department and Chief Expert in addition to the certification team and additional expertise for Pilot/OPS experts will ensure



			that this may be "inappropriate for particular changes". As DALs are directly linked to safety the potential impact of a double DAL adjustment could be significant (e.g. there is a significant difference in the level assurance provided between DAL B and DAL C for software and an even greater difference between DAL B and DAL D). On that basis: It is unclear how anything other than a single adjustment would be appropriate for required equipment It is also unclear whether there is a risk of this policy being combined with both the new software and AEH processes that are being developed and ED-79A/ARP4754A, resulting in a triple adjustment of DALS (i.e. one DAL adjustment via ED-79A/ARP4754A followed by a second adjustment via this process and a third adjustment via the referenced software and AEH policies). Additionally, the references to potential double adjustments in both this paragraph and in the final paragraph of step 4 (i.e. the reference to a Level B system being used to mitigate a Hazardous failure condition could be interpreted as being in conflict with the statement in the "EASA Certification Policy" section, which refers to "reduction of the level of DAL by one level". Further clarification of how the various sections of the document relate to each other in this regard would be beneficial to less experienced applicants.	79A/ARP4754A the referenced software and AEH policies and • Specifically prohibit the potential to use this process to gain a further a DAL adjustment if a DAL adjustment has already been granted via either the ED-79A/ARP4754A processes or the referenced software and AEH processes.		that decisions are appropriate. The Panel 10 expert will be informed.
40	. UK CAA	General N/A	Should this policy be applied to required equipment, it is unclear where a certificating authority would stand legally should an accident/serious incident occur, and the resulting investigation identifies that the DAL adjustment permitted under the operational benefit argument compromised the safety assessment process and contributed to the incident/accident.	 Specifically exclude required equipment Specifically exclude the application of this process to DAL A and B systems/components Clarify the relationship this document has to ED-79A/ARP4754A and 	Yes	The policy is governed by an EASA internal government board composed of senior management and technical management. The aim is to improve the safety performance and the CM ensure transparency in the process that will be applied.



					Specifically prohibit the potential to use this process to gain a further DAL adjustment if a DAL adjustment has already been granted via the ED-79A/ARP4754A processes or the referenced software and AEH processes.			
41.	UK CAA	General	N/A	• •	Update text to specifically exclude required equipment		Yes	The demonstration that the predicted operational safety benefit has been realised is not seen as proportionate and this is not requested for other requirements. In any case, Applicants will have to build their case. The governance board will base its decision on a number of inputs including the position of EASA pilots/OPS experts who will provide an independent view on the potential operational benefits.
42.	Garmin	General		Benefit Certification Memo (CM) but feels that this memo may fail to maximize the opportunities that could enable installation of safety enhancing technologies. In fact, it is not clear whether the proposed CM would allow installation of several safety enhancing systems that have been approved and validated by Garmin and others given the constraints of the	that the applicant can propose an alternate means of compliance but has to present the justification. Move the aspects of the DAL reduction to an appendix or separate section as one such alternate means that the agency will accept. Just don't block the applicant for being innovative. The burden Is on the applicant under such conditions.	No	Yes	An applicant can always propose an alternate means of compliance. The Net Safety Benefit approach and the underlying concept could in theory be used for other requirements. It was however decided to focus first on the DAL and then on the HIRF/Lightning. The Agency is not open at this stage to open more widely the scope of application.

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				things like system level verification in some way but if that is the intent it is not clear. It would also be different than the approach the FAA has taken which is to say that SLV is not development assurance and a DAL should not be claimed.					
43.	Garmin	General		alternate MOC are with respect to software/AEH and HIRF/Lz. There may be other areas. We understand and agree these are the most likely blockers for many safety enhancing systems or designs. But it may be at least worth acknowledging that	Add text acknowledging that the same process could be used by an applicant to justify using an alternate MOC for other areas with the agency position for the acceptability of such arguments being on a case-by-case basis. Or Make the process such that it can be used for any proposal with an appendix on what approach the agency has already determined is acceptable.	No	Yes	Disagree	The Net Safety Benefit approach and the underlying concept could in theory be used for other requirements. It was however decided to focus first on the DAL and then on the HIRF/Lightning. The Agency is not open at this stage to open more widely the scope of application.
44.	Garmin	General		The CM is lacking a description or definition of what an acceptable Net Safety Benefit (NSB) might look like. The extent is a requirement to justify the benefit: "— A substantiated justification for the operational safety benefit that the proposed change would offer," (pg. 6) But there is no explanation of the determination of a "net safety benefit". In other words, balancing the risk of bad with the already stated (and probably obvious) safety good. This leaves the NSB description / justification wide open and completely subjective, with the determination left to EASA as to whether it is good enough.	Provide a description, definition, or examples of how the benefits of a safety enhancing system would be balanced against the risks of potential determental failures or unintended operation. Explain at least at a theory level how an applicant would know if their intended system installation has the right balance prior to making an application/argument for it being a net safety benefit.	No	Yes	Partially agree	During the initial phase of implementation of the Net Safety Benefit concept, it is difficult to describe the details of the process. We expect to learn through the first projects and use this experience and knowledge for future updates of the CM. In any case, we recommend applicant to initiate the discussion with the agency early.
45.	Garmin	Introductio	3	following that seems to correlate the EASA net safety benefit to the FAA NORSEE: "It should be noted that whilst the FAA's	Suggest updating the policy to acknowledge not only NORSEE but the other policies adopted by the FAA that have similar goals to Net Safety Benefit.	No	Yes	Partially agreed.	The FAA Policy PS-ACE-23-10 for HIRF and Lightning (which has since been rolled into ASTM F3367) is being considered in frame of the updated of the CM in include credit for HIRF and Lightning.



			equipment was becoming obsolete and often had insidious failure modes such as vacuum systems. The FAA recognized these shortcomings would hinder the Part 23 fleet modernization goal and put additional effort into finding other acceptable means of compliance that enabled lower cost acceptable solutions for required systems. These other means included FAA Policy PS-AIR-23-09 for System Level Verification (SLV) and FAA Policy PS-ACE-23-10 for HIRF and Lightning (which has since been rolled into ASTM F3367).				
46.	Garmin	Introductio n / EASA Certification Policy / Step 4 - Evaluation of the operational benefits and agreement on the credit	The use of the term DAL. The Introduction's footnote that explains the use of the term DAL is a bit confusing. While FAA AC 23.1309-1E was published shortly after SAE ARP 4754A introduced the terms FDAL and IDAL, the AC uses neither FDAL nor IDAL. When DAL is used later in the context of the EASA Certification Policy, it is not clear what the agency means by "the reduction of the level of DAL by one level". Is that reduction at the FDAL level or at the IDAL level or either? Further, it is not clear how this DAL reduction relates to the current DAL reductions assigned via the safety continuum considerations reflected in AC 23.1309-1E, ASTM F3061 and the inwork proposals for a CS-27 safety continuum. Considering a part 23 class I / level 1 airplane, AC 23.1309-1E and F3061 would require DAL C for a primary system supporting a hazardous failure condition. Does EASA mean that the applicant can propose a reduction of the AC 23.1309-1E Figure 2 DAL C requirement to DAL D if a net safety benefit can be substantiated? Or is that considered "double-dipping" on the DAL reduction and the agency's intent is that the NSB reduction would be applied to the traditional DAL assignments (DAL A for Catastrophic, DAL B for Hazardous, etc)? If the latter is true then this certification memo will do nothing to assist the equipage of safety enhancing technology on the aircraft that most need it; i.e. part 23 classes I and II / levels 1 and 2 Normal	that the entire CM should be re- reviewed in light of such clarification to ensure other sections that use the term DAL (e.g., Problem Statement, Step 1, and Step 5) use the DAL term consistent with the intent. Further, consider that the FAA PS- AIR-23-09 position is that SLV isn't development assurance. Does the credit have to be expressed in the form of a DAL?	No Yes	Disagree.	The AC 23.1309-1E, ASTM F3061 and the in-work proposals for a CS-27 safety continuum are reflecting what is considered as the acceptable levels in the conventional sense and without consideration of operational credit. For example, the classes and proportionate objectives defined in the AC 23.1309-1E are the basis on which the operational credit can be applied. In any case, it remains an Agency decision to grant the credit or not depending on the specificities of the application.

				Category airplanes and small part 27 rotorcraft.					
47.	Garmin	Roadmap	5	Garmin applauds EASA for the safety mindset driven by the ASR and EPAS. We feel allowing those higher level safety reviews and objectives established by these exercises to guide the net safety benefit decisions of the agency is very appropriate. Using these principles to guide the NSB credit decisions will ensure those areas requiring key safety emphasis will get appropriate attention.	Observation only. Nothing to resolve.	Yes	No	Noted.	Noted.
48.	Garmin	Roadmap	5	Garmin understands that the proposed certification memo does not allow for deviations from the probability requirement specified in guidance but allows only DAL adjustments. This is a starting point but may be short sighted. Consider if an applicant had a replacement system for currently installed old technology that well exceeded the current experienced failure rate of said old technology or maybe failed in less insidious ways. Even if the probability of their new system failing fell short of the AC required probabilities, it could still potentially have a net safety benefit. Of course it would depend on the function and the impact of the safety benefit but why preclude an applicant from making that pitch?	Consider rewording the certification memo to generically outline the net safety benefit process but show the DAL allowance as one approach that could be accepted if NSB is justified. This would enable applicants to make other proposals. But the basic compliance demonstration process would be no different than what is proposed in the CM's 5 step highlevel process, but the CM would make no predisposition of whether the applicants proposal is acceptable.	No	Yes	Partially agreed.	The consideration of operational credit for the allocation of DALs is only one aspects and it is agreed that similar approach could be used for other requirements such as the probability requirement. It was however decided to limit the scope of the CM at issue 1 to DALs. The Agency has been open in the case of replacement of a system using an old technology with a system using a new technology which is demonstrated to be safer. Flexibly has been granted in case of GA aircraft but is not part of the policy described in this CM.
49.	Garmin	Roadmap	5	With respect to HIRF and Lightning, we are glad to see that this is being considered for NSB credit. The HIRF and lightning compliance has potential for significant cost to certification, especially if testing on the airplane/rotorcraft is required. Making proportionate requirements for HIRF and lightning always seems to trail other areas of certification. Garmin hopes that taking advantage of published guidance for fixed wing per FAA policy PS-ACE-23-10 and ASTM F3367 (or at least with the current ballots incorporated) allows early adoption of requirements for fixed wing aircraft. We would encourage the agency to consider similar approaches (albeit with likely different levels) for the low end of	As noted in the Problem Statement: "It is the Agency's intent to extend the Net Safety Benefit policy to offer credit for systems or equipment that provide operational safety benefits to compliance demonstration with CS 23.1306 and CS 27.1316, 'Electrical and electronic system lightning protection' and CS 23.1308 and CS 27.1317, 'High-Intensity Radiated Fields (HIRF) protection'. The demonstration of compliance should allow the use of the ASTM 3367 for fixed wing aircraft and for rotorcraft allow the proposed	No	Yes	Partially agreed.	Independently of the publication of the final AMC to the SC.VTOL, an applicant can always propose alternative means of compliance.



				·	compliance method similar to MOC SC-VTOL once it is finalized.				
50.	Garmin	Problem Statement	5	аррисантся.	Correct spelling of "technics" to "techniques"	Yes	No	Agreed.	Corrected accordingly.
51.	Garmin	EASA Certification Policy / Step 5 - Compliance demonsrati on	6/7	validated using a net safety benefit approach. The CM is missing the opportunity to make use of other considerations (such as specific conditions, architectures and mitigations like those presented in already validated systems) by making DAL D a hard limitation. It would be preferable to reword the EASA position so that it is a general position that EASA will not accept DAL D for Catastrophic but will still consider individual circumstances if the net safety benefit is justified.	Garmin's preference is for EASA to harmonize with FAA's position to allow alternate means of compliance that are not strictly based on development assurance considering that the European market by itself is not large enough to support an unharmonized policy that requires substantially more certification effort than is required by FAA. However, assuming EASA stays with the DAL-based position, Garmin would recommend not making the DAL D limitation for Catastrophic failures a hard limitation. The burden is still on applicant to justify the net safety benefit to allow the deviation from traditional means of compliance and the agency always has final say in whether something is acceptable.	No	Yes	Disagree.	The discussion on the compliance demonstration for software is not part of this CM. The policy applies to new applications. The position that DAL D will not be accepted for Catastrophic is linked to the credit for the operational safety benefit. This CM does not change the DAL reduction is from the AC 23.1309-1E Figure 2 classtailored DALs.



				getting these low cost but safety enhancing systems certified.					
52.	Garmin	Step 1 - Application for Net Safety Benefit credit thru Step 5 - Compliance demonstrati on	6 - 7	Garmin agrees with the overall 5 step process outlined in this paper. We believe it provides a structured approach to an issue the industry and many regulators have struggled with. As EASA is aware, ASTM F44 has a draft standard (currently on hold) that was intended to provide an overview of a similar process, explain the steps that are applicant and agency responsibilities and then provide some detailed guidance on how an applicant might approach step one. The intent at this point for the ASTM standard is to be general and not specific to DAL reductions, etc. There may still be a broader benefit to that standard.		Yes	No	Noted.	The ASTM F44 standard was not considered in the drafting of this Certification Memo. The draft standard will be reviewed prior to the publication of the updated issue of the CM. The CM is written in generic terms and industry standard will be welcomed to provide to provide details.
53.	Garmin	Step 1 - Application for Net Safety Benefit credit	6	It is obviously easier to argue a net safety benefit for a large existing fleet. However, EASA should be careful that it doesn't create a void that allows the technology in older aircraft to be refreshed but makes it difficult to install that same technology in new very small aircraft. It does not make sense to allow a small single engine piston that is 10 years old to install a system as part of the existing fleet but then preclude that same system from being installed on the production line for a newly built version of the same aircraft. Originally the FAA considered limiting the SLV and HIRF policies to retrofit upgrades only but ultimately determined that "certifiable is certifiable" whether it is the existing fleet or newly built.		No	Yes	Partially agreed.	After consideration of the comments, it was decided to remove the reference to the size of the fleets as this criteria is not directly used in the evaluation. The argument that a similar policy can be applied for newly built will be discussed as part of the next update of the CM.
54.	Garmin	Step 4 - Evaluation of the operational benefits and agreement on the credit	7	Step 4 includes the statement "When DAL D is expected to mitigate hazardous failure conditions, additional conditions and limitations might be needed." But the EASA Certification Policy on page 6 states "the Agency will consider granting credit to the compliance demonstration for development assurance activities which consist of the reduction of the level of DAL by one level" (bold in original).	Clarify the intent.	No	Yes	Noted.	The AC 23.1309-1E is recognised by EASA. For some category of products, the objective for hazardous is DAL C. This CM can under certain conditions provide a credit of one level which could lead to a DAL D. The Agency may consider applying additional conditions and limitations in this case.

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				Given the early statement that the DAL reduction is limited to a single level, it isn't clear how it will be possible to use DAL D to mitigate a hazardous failure condition since that would be a DAL reduction of two levels from what is traditionally required (hazardous traditionally requires DAL B). The additional flexibility that may be intended by the Step 4 statement would be beneficial, i.e., allowing one additional DAL reduction beyond what is already allowed in AC 23.1309-1E Figure 2. However, it is not obvious if this flexibility is what is intended by the CM.					
55.	Garmin	Step 5 - Compliance demonstrati on	7	The first paragraph includes the phrase "performed in accordance with to the applicable standards"	Suggest deleting "to" from this phrase	Yes	No	Agreed.	Corrected accordingly.
56.	Garmin	Step 5 - Compliance demonstrati on	7	example: The application of the Net Safety benefit policy results in a reduction of the DAL from C to D. This may allow 'System Verification' to be applied as Means of Compliance (MoC)." But the EASA Certification Policy on page 6 states "the Agency will consider granting credit to the compliance demonstration for development assurance activities which consist of the reduction of the level of DAL by one level" (bold in original).		No	Yes	Disagreed.	'System Verification' refers to the FAA policy PS-AIR-23-09 which is not recognised by EASA. The policy described in this CM discusses the DAL allocation and does not enter into the recognised guidance for item-level compliance demonstration.

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			is not obvious if this flexibility is what is intended by the CM.					
57. Garmin	Who this Certification Memorand um affects	7	While the statement mentions "equipment manufacturers" it is not clear whether this includes (E)TSOA holders.	Specifically include (E)TSOA holders among those organisations that may use this CM.	No	Yes	Disagreed.	It is not planned to extend the scope of applicability to ETSO. The credit is assessed and provided at aircraft level. A deviation could be requested at the level of the ETSO authorisation.
58. Transport Canada Andreas Hartono	General		typo in this document (i.e. CS 25.2510, should be CS 23.2510).	Update document accordingly	Yes	х	Agreed.	The sentence will be corrected.
59. Transport Canada Natasa Mudrinic	General	General	How does this proposed CM and its usage impact the bilateral agreements EASA has in place with other authorities?		Yes	X	Noted.	The impact of the application of this CM on the validation will depend on each authority with which EASA has a bilateral agreement. If the foreign authority recognises the policy, there will be no impact. If the foreign authority does not recognise the policy, it can lead to an SEI. The applicant will have to comply in this case with the requirements from the foreign authority.
60. Transport Canada Natasa Mudrinic	General		Will there be any guidance, framework, restrictions or process on how the board will be reviewing an Application for Net Safety Benefit?		Yes	X	Noted.	The definition of the members of the Board is an EASA internal information and was not included in the CM. For information, the Board will be composed at the minimum of the Project Certification Manager (PCM) of the project, the relevant system experts involved in the project (e.g avionic, flight,), the senior system safety expert, the Chief Expert - Avionics & Electrical Systems and the section manager of the product. Expertise from pilot, flight test engineer or operational OSD experts will be included in the evaluation as well. The first applications of the CM may receive an additional scrutiny. After the first approvals and when the Agency would have gain confidence in the process, the size of the Board will be reduced.

^{*} Please complete this column using the word "yes" or "no"

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