European Aviation Safety Agency

Comment-Response Document 2017-04

Appendix

to ED Decision 2017/021/R

RELATED NPA 2017-04 — RMT.0591) — 8.12.2017

Individual comments (and responses)

In responding to comments, a standard terminology has been applied to attest EASA's position. This terminology is as follows:

(a) **Accepted** — EASA agrees with the comment and any proposed amendment is wholly transferred to the revised text.

(b) **Partially accepted** — EASA either agrees partially with the comment, or agrees with it but the proposed amendment is only partially transferred to the revised text.

(c) **Noted** — EASA acknowledges the comment but no change to the existing text is considered necessary.

(d) **Not accepted** — The comment or proposed amendment is not shared by EASA.

CRD table of comments, responses and resulting text

(General Comments)	-

comment	*2* comment by: *Pavel Benisek / Prague Airport* We discussed the amendments within our company (Prague Airport). We have no comments and we do appreciate the proposed changes regarding NLA. Thank you.
response	Noted.

comment	*40* comment by: *CAA-NL* **General** With the growing numbers of abbreviations we would like to suggest to include a list of abbreviations, especially if those used have a different meaning in other domains like ARC = also Airworthiness Review Certificate.
response	Accepted. A list of acronyms is provided in Issue 4 of CS-ADR.DSN.

comment	*159* comment by: *ACI Europe* ACI Europe strongly welcomes this NPA for its progressive and stakeholder oriented approach. We generally welcome the proposed amendments to RMT.0591 which have been by and large agreed in preceeding thematic meetings. Taking the latest research, stakeholder inputs via thematic meetings and stakeholder interactions is, in our view, the right approach to rule making and to the amendment to existing rules. Also, adjusting the regulation to better reflect the language of corresponding ICAO documentation is to be welcome for clarity and consistency reasons as are clarifications on the obligatory or optional nature of requirements. In order to facilitate the earliest possible implementation of this NPA with the commensurate cost benefits for aerodrome operators as well as airlines, the comments are restricted to enhance clarity or eradicate typographical errors. We suggest the inclusion of a Glossary of Terms and acronyms as an appendix for easier use and reference of the regulation. The comments of ACI Europe should, however, be seen as complimentory to those of its

	members which may be submitted seperately.
response	Noted. The certification specifications take into account as much as possible the language of corresponding text in ICAO documentation. Accepted. A list of acronyms is provided in Issue 4 of CS-ADR.DSN.

comment	*165* comment by: *Bombardier* The NPA proposes replacing the current method of classifiying minimum aerodrome geometries for an aircraft based on wing and OMGWS, and replacing it with a parameter based solely on the OMGWS. This assumes OMGWS is an appropriate indication of scale for all aircraft. However, aircraft with nacelle-mounted landing gear such as the Bombardier DHC-8-400 inherently have a greater OMGWS when compared with similar (MTOM, wingspan) A/C with main landing gear mounted on the fuselage or near the wing root. A nacelle-mounted landing gear configuration results in a reduction of wheel/pavement edge margin but is compensated by an increased vertical fin/rudder size and an improved effectiveness in differential braking. Since aircraft with nacelle-mounted landing gear have greater OMGWS, the ratio between LG track and base is different when compared to similar aircraft with fuselage/wing-mounted main landing gear. This results that for the same OMGWS, an aircrft with nacelle-mounted landing gear has a shorter LG base and can take tighter turns, and can therefore be operated on narrower taxiways than an aircraft with main landing gear mounted on the fuselage, or near the wing root, with the same OMGWS. Using only OMGWS as the baseline scale parameter for aircraft of various design layouts results in an overestimation of runway/taxiway width requirements for aircraft with nacelle mounted LG, and this needs to be considered when determining minimum allowable runway and taxiway widths.
response	Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. The current methodology of determining the ARC is based on determining two elements which are related to the aeroplane performance characteristics and dimensions. Element 1 is a number based on the aeroplane reference field length and element 2 is a letter based on the aeroplane wingspan and outer main gear wheel span. A particular specification is related to the more appropriate of the two elements of the code or to an appropriate combination of the two code elements. The code letter or number within an element selected for design purposes is related to the critical aeroplane characteristics for which the facility is provided. The code number for element 1 corresponds to the highest value of the aeroplane reference field lengths of the aeroplanes for which the runway is intended. The code letter for element 2 is determined by selecting the code letter which corresponds to the greatest wingspan, or the greatest outer main gear wheel span, whichever gives the more

demanding code letter of the aeroplanes for which the facility is intended. The NPA is not proposing the replacement of the current methodology of determining the ARC, but only to de-correlate the two code letter components i.e. wingspan and outer main gear wheel span (OMGWS). This is proposed because the wingspan is relevant for separation distances while OMGWS is relevant to infrastructure requirements. Those two components should be used separately, since using the most demanding component may cause overdesign, either for separations or runway/taxiway width for some aeroplane types. As the OMGWS is relevant for determining runway widths, taxiway width and graded portion of taxiway strips, it should be referenced directly in the relevant provisions to avoid the complexity of a third code element.

Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. The documents are archived at ICAO and accessible to the Member States.

comment *263* comment by: *Airbus*

This NPA proposes changes to the current aerodrome design Certification Specifications related to the aerodrome reference code (ARC), the runway width and shoulders, and strip and separation distances between runways and taxiways in line with recently published ICAO State Letter AN 4/1.1.57-17/44, dated 19 April 2017.

AIRBUS fully supports the changes proposed within ICAO State Letter AN 4/1.1.57-17/44, and the early implementation in EASA Aerodromes regulations for the following reasons:

- AIRBUS agrees that the existing specifications are overly conservative, since they were derived before the advent of modern aircraft and without the benefit of decades of operating data. Current applicable airport design and operational parameter values were coming from old ICAO Annex 14 assumptions (some as old as 1951) made by ad-hoc working group (most rationales coming from the early 70s and early 80s).
- The changes proposed within ICAO State Letter AN 4/1.1.57-17/44 have been well justified and validated by various studies based on actual operational data and conducted in different States and international organizations. They have proven that aircraft operating into today's airports do not need the large safety buffers built into the current design methodology.
- The proposed changes will reduce aerodrome overdesign, while guaranteeing the safety of operations.
- Significant cost savings are expected as it would induce lower construction and maintenance costs, but also greater opportunity for increasing airport capacity, in particular thanks to the accommodation of larger aircraft on existing installations.
- To be noted that ICAO doc 9157, Aerodrome Design Manual, Part 1 & Part 2 is being updated (target 2017), in line with proposed amendments to Annex 14 (Aerodromes, Volume I - Aerodrome Design and Operations) and the Procedures for Air Navigation Services (PANS) — Aerodromes (Doc 9981).

response	Noted.

comment	*270* comment by: *René Meier, Europe Air Sports* Eu Europe Air Sports on behalf of all members thanks the Agency for preparing NPA 2017- 04 "Regular update of aerodrome rules". Many of the aerodromes our communities use do not fall under European regulations. There are, however, some elements in this NPA requiring careful consideration, e.g. the proposed text on the Autonomous Runway Incursion Warning System (ARIWS). c)
response	Noted.

comment	*294* comment by: *Fraport AG* In general we are happy that EASA has implemented a couple of points into the CSs before ICAO will have them active in Annex 14.
response	Noted.

comment	*301* comment by: *Federal Office of Civil Aviation (FOCA), Switzerland* The Federal Office of Civil Aviation (FOCA) appreciates the opportunity to comment on this NPA and would like to thank the Agency for the excellent work.
response	Noted.

comment	*302* comment by: *Bavarian Aviation Authority* With this NPA EASA suggests changes that might, at first view, offer potential for raising hazards and risks for aviation safety such as reducing separation distances and safety margins for strip, taxiway clearance and obstacle limitation surfaces etc. Especially since it is our task to evaluate and monitor aerodromes within our responsibility, it is essential for us to understand the reasons of the implemented change and therefore according studies, calculations and methodologies. Explanations given by EASA in chapters 1 and 2 are not precise enough to achieve this. Changes should therefore be traceable in more detail.
response	Noted. EASA's mission is to ensure the highest common level of safety protection for EU citizens. The proposed amendment in this NPA are in line with ICAO developments (ICAO

	SL 17/44 which provides more detailed explanations) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. The documents are archived at ICAO and accessible to the Member States.

comment	*303* comment by: *Bavarian Aviation Authority* In our opinion the suggested changes are not critical in terms of time, neither were the last adaptions to the CS, since the certification of aerodromes is currently in progress or already completed, respectively, it would be preferred if changes were concentrated leading to larger intervals for issuing new versions of the aerodrome specifications. Processing and commenting NPA tends to become very time-consuming for authorities and aerodromes, especially when lacking the underlying studies and calculations.
response	Noted. EASA is providing regular updates of CSs, based on the ICAO developments or other received proposals from stakeholders. Proposed amendments are presented and discussed during the Advisory Bodies and thematic meetings. For the future, EASA is considering issuing proposed amendments to the aerodrome rules in one package (combining both certification specifications and acceptable means of compliance) and at reduced intervals of time.

comment	*304* comment by: *Belgian CAA* The Belgian CAA has analysed NPA 2017-04 CS-ADR-DSN Issue04 and has no comments or proposals to this NPA.
response	Noted.

comment	*305* comment by: *Bavarian Aviation Authority* It is important to us to understand that EASA looked at the proposed changes in its entirety. Particularly when changing the width of the strip, it needs to be clear, that all affecting factors and consequences (such as changes to the inner transitional surfaces) have already been considered.
response	Noted. The response is provided under the related paragraph.

comment	*306* comment by: *Bavarian Aviation Authority* The primary goal of EASA ought to be the implementation of higher safety standards within Europe. Therefore even ICAO recommendations were set as new European standards and adopted into the requirements. In this NPA EASA specifications are proposed that seem to infringe even ICAO standards. The focus seems to be rather economically driven than safety based, leaving currently many of the consequences at question.
response	Noted. EASA's mission is to ensure the highest common level of safety protection for EU citizens. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44 that provides more detailed explanations) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. The documents are archived at ICAO and accessible to the Member States.

comment	*341* comment by: *Swiss Aerodromes & GASCO (General Aviation Steering Committee Switzerland)* Our organization represents the interests of the regional airports of Switzerland (Code C-aerodromes). As such, our members are not directly affected by the subject matter of NPA 2017-04, which focuses on the requirements of larger airports of the D-, E- and F-classes. Nevertheless and while welcoming EASA's approach of lightening the regulatory burden for aerodromes, it is our obligation to take into account provisions, which may have an effect on our class of aerodromes in the future. Therefore we are including a few general remarks, as well as a commentary with regards to the provisions on ARIWS. Please find our comments on the respective pages.
response	Noted.

Executive Summary	p. 1

comment	*3* comment by: *Gatwick Airport* Agree with positive executive summary
response	Noted.

comment	*132* comment by: *John Hamshare* We welcome the alignment with ICAO developments and otther technical improvements and encourage EASA to continue to implement similar improvements as the aviation industry continues to develop new and improved systems, procedures and equipment.
response	Noted.

process and applicability p. 1

comment	*18* comment by: *Gatwick Airport* Agree with process and applicability
response	Noted.

comment	*342* comment by: *Swiss Aerodromes & GASCO (General Aviation Steering Committee Switzerland)* We have been experiencing a tendency on NAA-level to declare as much provisions from ICAO and EASA as mandatory on a national level as possible, even in cases where the norms were not meant to be compulsory by the issuing international body. This refers prominently to recommendations being declared as mandatory. Therefore, we strongly suggest that EASA pursues a policy of strict declaration and differentiation between mandatory "standards" and optional "recommendations" also on its European level of regulation.
response	Noted. ICAO Standards and Recommended Practices are not directly comparable with the European regulatory system for aerodromes. ‘Standards’ are those specifications where uniform application is necessary for the safety or regularity of international air navigation and to which contracting States will conform in accordance with the ICAO Convention. ‘Recommended practices’ are specifications for which uniform application is desirable in the interest of safety, regularity or efficiency of international air navigation, and to which contracting States will endeavour to conform. EU rules for aerodromes on the other hand are promulgated as Implementing Rules (IRs), Acceptable Means of Compliance (AMCs), or Certification Specifications (CSs) all with supporting of appropriate Guidance Material (GM). IRs are binding in their entirety and are used to specify high and uniform level of safety and uniform conformity and compliance without variation. CSs are non-binding technical standards adopted by the EASA to meet the essential requirements (ERs) of Annex Va to Regulation (EC) No 216/2008 (the Basic Regulation). Relevant Standards are

normally transposed as CS material, while the transposition of Recommended Practices is analysed on a case-by-case approach to determine whether to be considered as CS or GM.

comment	*19* comment by: *Gatwick Airport* Satisfactory
response	Noted.

comment	*20* comment by: *Gatwick Airport* Gatwick Airport support the approach used
response	Noted.

comment	*21* comment by: *Gatwick Airport* Gatwick airport supports the initiative to address the accommodation of Large-Aircraft at existing aerodromes
response	Noted.

comment	*340* comment by: *IATA* *IATA and its members airlines are supporting the changes in taxiway and runway dimensions for New Large Aircraft (NLA) and the changes in separations between parallel*

	*runways / taxiways and objects as proposed in the **EASA NPA**. IATA expects that the changes will have a positive effect on investments and maintenance cost in new runways and taxiways globally, land use needs and costs.*
response	Noted.

2.2. Objectives p. 5

comment	*22* comment by: *Gatwick Airport* Harmonisation between EASA and ICAO is welcomed
response	Noted.

comment	*133* comment by: *John Hamshare* We welcome the harmonisation achierved by these amendments and approve of the objectives to increase safety and reflect industry state of the art and best practices.
response	Noted.

2.3. Overview of the proposals p. 5-21

comment	*23* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*42* comment by: *UK CAA* **Page No:** 10 and 27, **CS ADR-DSN.B.160 Width of Runway Strip** **Paragraph No:** Fifth Para on page 10, Para 10 on page 27

Comment: As a result of amending the width of runway strips there is a consequential change to the origin of the transitional surface and subsequently all of the Obstacle Limitation Surfaces (OLS). This consequential change should be highlighted to a greater degree.

Justification: In the UK and other States the OLS are used as part of aerodrome safeguarding in conjunction with local authority planning departments. As a result of the change all the safeguarding maps will need to be amended and a number of UK CAA CAPs will require revision. Additionally there is a proposed change from the ICAO OLTF (Obstacle Limitation Task Force) to further reduce the strip width to possibly 75 metres in a few years time resulting in a further change.

Proposed Text: Ensure in the NPA summary that the consequential changes to the OLS are better highlighted as a result of the reduction of runway strip width.

response

Noted: The ARC TF and EASA considered that based on modern aeroplane performance and improvements in aeroplane avionics and flight controls, the values of the runway strip width for precision approach runways and non-precision approach runways could be safely reduced from 150 m to 140 m from the runway centre line, where the code number is 3 or 4, and from 75 m to 70 m, from the runway centre line, where the code number is 1 or 2. The justification is based on several sources from ACI, some airports studies, FAA, Transport Canada, etc. Due to the runway strip width reduction the location of Transitional Surface is also moved to a distance of 140 m or 70 m accordingly. The dimensions specified in CS ADR-DSN.B.160 (a) and (b) are minimum required distances ('… should extend laterally to a distance of at least :'). These dimensions can be kept at the current (higher) values if so decided and accepted by the aerodrome operator, local land use planning and other authorities. The ICAO Obstacle Limitation Surfaces Task Force (OLS TF) confirmed that this proposed reduction could be made independently of the ongoing research by the OLSTF regarding Chapter 4 of Annex 14, Volume I, Aerodromes.

comment

134 comment by: *John Hamshare*

We welcome the use of notes to confirm that the Definitions of arresting systems, ARIWS and FOD detection systems does not infer that they should be installed.
If possible this point needs to be stressed.

response

Noted. CS ADR-DSN.T.921 applicability clause provides that the inclusion of detailed specifications for an ARIWS is not intended to imply that an ARIWS has to be provided at an aerodrome.

comment

168 comment by: *daa - Dublin & Cork airports*

As a result of amending the width of runway strips, there is a consequential change to the

origin of the transitional surface and subsequently to all of the Obstacle Limitation Surfaces (OLS). This consequential change should be highlighted to a greater degree.

A statement could be included to advise where 150ms runway strip has been provided, this should be maintained to ensure that OLS surfaces are not impacted but in the case of new / alteration to existing infrastructure, a minimum strip width of 140ms can be considered as compliant.

response

Noted: The ARC TF and EASA considered that based on modern aeroplane performance and improvements in aeroplane avionics and flight controls, the values of the runway strip width for precision approach runways and non-precision approach runways could be safely reduced from 150 m to 140 m from the runway centre line, where the code number is 3 or 4, and from 75 m to 70 m, from the runway centre line, where the code number is 1 or 2. The justification is based on several sources from ACI, some airports studies, FAA, Transport Canada, etc. Due to the runway strip width reduction the location of Transitional Surface is also moved to a distance of 140 m or 70 m accordingly. The dimensions specified in CS ADR-DSN.B.160(a) and (b) are minimum required distances ('… should extend laterally to a distance of at least :'). These dimensions can be kept at the current (higher) values if so decided and accepted by the aerodrome operator, local land use planning and other authorities. The ICAO Obstacle Limitation Surfaces Task Force (OLS TF) confirmed that this proposed reduction could be made independently of the ongoing research by the OLSTF regarding Chapter 4 of Annex 14, Volume I, Aerodromes.

comment

343 comment by: *Swiss Aerodromes & GASCO (General Aviation Steering Committee Switzerland)*

rf. CS ADR-DSN.T.921 Autonomous runway incursion warning system (ARIWS):
We strongly support a strict implementation of the following goal with regards to ARIWS: *"The wording of the applicability clause (CS ADR-DSN.T.921(a)) ensures that the provisions should in no way be interpreted as an obligation or recommendation to install such a system."*

response

Not accepted. CS ADR-DSN.T.921 applicability clause already provides that the inclusion of detailed specification for ARIWS does not imply that this system has to be provided at an aerodrome.

2.4. Expected benefits and drawbacks of the proposals p. 21

comment

24 comment by: *Gatwick Airport*

	Agree with expected benefits
response	Noted.

comment	*129* comment by: *Bombardier* Contrary to the stated intent to allow operation of larger aircraft at smaller facilities, the proposed changes would restrict the ability of the DHC-8-400 to operate at facilities where it is already operating. This is obviously inadvertent, but should be addressed by introducing alternate methods to evaluate aircraft with configurations that differ from typical large transport aircraft with main landing gear mounted on the fuselage or near the wing root,
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44 that provides more detailed explanations) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. The documents are archived at ICAO and accessible to the Member States. The wingspan is relevant for aerodrome characteristics related to separation distances, while OMGWS affects ground-based manoeuvring characteristics. Thus, the two components should be used separately, since using the most demanding component may cause overdesign, either for separations or runway/taxiway width for some aeroplane types as for example Dash 8-400, which concerning the wing span and OMGWS cannot be properly codified. Regarding the particular characteristics of Dash 8-400 (wing span and OMGWS) and proposed amendment, there are no changes in separations or aerodrome infrastructure requirements.

comment	*135* comment by: *John Hamshare* The significant cost savings associated with the proposed changes is welcomed and we encourage EASA to continue to consider similar opportunities in the future.
response	Noted.

3. Proposed amendments - Book 1 - CSs p. 22

comment	*25* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*225* comment by: *Aerodrome safety regulation departement* CS ADR-DSN.B.135 is amended in NPA Issue 4 and yet not listed in the amended CS. Please find hereunder our comments on this specific CS. **Comments :** The value of OMGWS criterion for which the runway shoulders should be prepared or constructed is common to cases (1), (2) and (3). That's why we suggest to put back up the OMGWS criterion at the very beginning of the CS, as followed : For aeroplanes with an OMGWS from 9m up to but not including 15m, the runway shoulders should extend symmetrically on each side of the runway so that the overall width of the runway and its shoulders is not less than : (1) 60 m where the code letter is D or E ; (2) 60 m where the code letter is F limited to two- or three-engined aeroplanes ; (3) 75 m where the code letter is F for four (or more) engined aeroplanes.
response	Accepted. CS ADR-DSN.B.135 is amended accordingly. CS ADR-DSN.B.125 is also reworded.

CS ADR-DSN.A.002 p. 22

comment	*26* comment by: *Gatwick Airport* Concur with definition
response	Noted.

comment	*169* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments

response	Noted.

CS ADR-DSN.A.005 p. 22-24

comment	*14* comment by: *Amsterdam Airport Schiphol - AMS/EHAM (and D.A.A)* In the GM1 to this Certification Specification, the abbreviation 'ARC' is incorporated in the title. This abbreviation is missing in the title of the Certification Specification itself. It is suggested to add the abbreviation 'ARC' to the title of this CS.
response	Accepted. CS ADR-DSN.A.005 is amended to read as follows: 'Aerodrome reference (ARC)'. Typo in GM1 ADR-DSN.A.005 is corrected accordingly.

comment	*136* comment by: *John Hamshare* The proposed changes are welcomed and are considered to be a positive response to the improvements in safety and technical developments made by the aviation industry.
response	Noted.

comment	*170* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*272* comment by: *René Meier, Europe Air Sports* CS ADR-DSN.A.005 pages 22-24/115 We welcome the porposed de-correlation. Rationale The new presentation makes understanding easier. Remark

	At the top of page 24, table "code element 1" you mention "Aeroplane reference field length". We believe this should read "Aerodrome reference field length" as indicated on page 7/115, fourth para of the CS ADR-DSN.A.005 explanations.
response	Not accepted. In CS ADR-DSN.A.005 table 'code element 1' correctly reads 'aeroplane reference field length'. On page 7/115 reference to 'aerodrome' is a typo and incorrect.

comment	*279* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*307* comment by: *Bavarian Aviation Authority* With changing the ARC, EASA aims to reduce overdesign. In our opinion the adaptation of the ARC contradicts the classical meaning of the ARC according to ICAO, aiming for the 'worst case consideration' for each aircraft type. By connecting the aerodrome reference code solely to the wingspan of an aircraft, the aerodrome reference code becomes nothing but a complicated synonym for wingspan. Basically EASA could forgo the ARC and relate remaining specifications directly to the wingspan. Changing the ARC like EASA suggests, puts the usefulness of the new system into question. When there is a need to put a higher focus on infrastructure elements affected by the OMGWS, it would be also possible to do that by expressing an additional condition within the requirement itself (as already practiced with certain specifications being linked to wheelbase and wheeltrack instead of code letter). That would principally lead to the same outcome without leading to the negative impacts a change of the ARC would result in. Changing the ARC may lead to consequences that may have not necessarily been considered yet. Having different reference codes on international level and supranational level may lead to confusion and misunderstandings. When publishing the reference code based elements in the AIP, it will probably be needed to publish ICAO and EASA ARC. Currently internationally used software systems for airport planning are utilizing the existing ARC. After the adaptation according to this NPA, these systems would have to be split (within or outside EU) due to the different reference codes. Also some airport in-house systems are using the ARC and need to be changed costly and time-consuming, while generating no safety benefit. The proposed outcome (reduction of distances) could also be accomplished without changing the ARC (see above). Having two ARC code systems and increasing the changes between ICAO and EASA regulation raises the bureaucratic effort of planning and supervising. Considering the possible consequences of the proposed change, compared to the generated benefit, we kindly ask EASA to reconsider the adaptation of the ARC.

When considering new infrastructure elements, aerodromes already have to take into account the most demanding aircraft for that structure, not solely the aerodrome reference code, which is in any case only relevant for planning and design purposes. The EASA system with its tools for possible deviations further supports that logic. The higher code letter aircraft method considers each aspect of larger aircraft operating at small or medium sized aerodromes. Safety Assessments have to be generated to assure safe operation. The overall change of the ARC reduces the need for a detailed analysis. Therefore it needs to be pointed out by EASA that all possible / relevant safety issues have been considered before implementing this change. Ideally this adaptation is reconsidered taking into account the consequences and the benefit.

response

Noted. The proposed amendments in this NPA are in line with the ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC F) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. The proposed amendment of ARC by this NPA is identical to the ICAO amendment proposed by SL/44. The NPA is not proposing the replacement of the current methodology of determining the ARC, but only to de-correlate the two code letter components i.e. wingspan and outer main gear wheel span (OMGWS). This is proposed because the wingspan is relevant for separation distances while OMGWS is relevant to infrastructure requirements. Those two components should be used separately, since using the most demanding component may cause overdesign, either for separations or runway/taxiway width for some aeroplane types.

CS ADR-DSN.B.045 p. 24-25

comment

27 comment by: *Gatwick Airport*

Agree with proposal

response

Noted.

comment

130 comment by: *Bombardier*

The DHC-8-400 has an OMGWS of 9.52m. This is 6.7% larger than the 8.92m OMGWS of the Airbus A318, which has a MTOM of approximately 68000kg, more than twice the MTOM of the DHC-8-400, and a wingspan approximately 20% larger than the DHC-8-400. Under the new rules however, the A318 would still be allowed to operate on 30m wide runways, while the DHC-8-400 would now have to operate on 45m wide runways.

As mentioned in the supporting GM for this standard, the runway widths were developed

based on "typical aeroplane characteristics", which we assume include main landing gear mounted on the fuselage or near the wing root. As the DHC-8-400 main landing gear are mounted on the engine nacelles, the OMWGS is considerably larger than in other aircraft of comparable weight and capacity. While OMWGS may be an appropriate indicator of relative aircraft size for aircraft of similar configuration, the model fails when those assumptions are violated.

Instead of limiting operations to ensure all aircraft conform to the assumptions of this model, it would be more logical to modify the model to accommodate these alternate configurations. We recommend the OMGWS be used to dictate minimum runway width only in the case of aircraft with main landing gear mounted on the fuselage or near the wing root, and that an alternate model be used in the case of other aircraft. Alternatively, OMGWS thresholds for class A/B/C aircraft with nacelle mounted landing gear should be adjusted.

response

Not accepted. The proposed amendments in this NPA are in line with the ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and working papers. All documents are archived at ICAO and accessible to the Member States.

In accordance with the current requirements of CS ADR-DSN.A.005, paragraph (d) (identical to ICAO Annex 14, Vol I, Aerodromes, Paragraph 1.6 Reference code) ‘The code letter for element 2 should be determined from Table A-1, column (3), by selecting the code letter which corresponds to the greatest wingspan, or the greatest outer main gear wheel span whichever gives the more demanding code letter of the aeroplanes for which the facility is intended’.

The two components of the code letter element were separated in order to remove any potential for an assumed alignment or relationship between the two code elements of the ARC. The wingspan component is relevant for separations, while OMGWS component impacted ground-based manoeuvring characteristics.

The separation of wingspan and OMGWS in this NPA does not change the runway width requirements.

comment

171 comment by: *Aerodrome safety regulation departement*

Proposition accepted without comments

response

Noted.

comment	*268* comment by: *Copenhagen Airports Ltd* **CS ADR-DSN.B.045 Width of runways, Table B-1. Width of runway** The safety argument why an aircraft with OMGWS up to 9 m can operate on a Code 3 runway 30 m wide, and not operate on a Code 4 runway also 30 m, seem to be outdated. Therefore CPH suggest that the 45 m for Code 4, OMGWS up to 9 m, is reduced to 30 m.
response	Noted. The proposed amendments in this NPA are in line with ICAO developments on the same subject (ICAO SL 17/44). The commentator is also invited to provide to EASA the explanation and justification for the proposed amendments.

comment	*280* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*293* comment by: *Federal Office of Civil Aviation (FOCA), Switzerland* *Comment FOCA to Table B-1:* In order to improve clarity and readability, we suggest to reduce the width on the left side of the top level cell “Outer Main Gear Wheel Span (OMGWS)” and to insert a new blank cell (like in the old version of Table B-1).
response	Accepted. Table B-1 is amended accordingly.

comment	*308* comment by: *Bavarian Aviation Authority* According to the new system, it will be conform to the rules to plan a runway with a width of 18m for an ICAO (and former EASA)-Code letter D aircraft. Corresponding to ICAO Aerodrome Design Manual Part 1 Runways, ICAO considered following factors affecting the width of runways: deviation of an aircraft from the centre line at touchdown, cross-wind condition, runway surface contamination (e.g. rain, snow, slush or ice), rubber deposits, crab landing approaches use in cross-wind conditions, approach speeds used, visibility and human factors. The manual further states: “Simulator studies aborted take-offs on contaminated runways, with one engine failure and in cross-wind conditions, and through actual observation at many airports, indicate that the specified runway width for each aerodrome reference code is operationally required. Should aircraft operations be planned on runways with lesser widths than specified above, the consequent impact on safety, efficiency and regularity of operations and on airport capacity must be studied.” Especially when planning for an according runway width, we do not think that only taking account the Outer Main Gear Wheel Span (OMGWS) will ensure a safe operation of

aircraft. Were parameters for narrow runway operations also considered? We kindly ask EASA therefore to reconsider the decision for this change or publish the underlying studies and calculations.

response Noted. EASA's mission is to ensure the highest common level of safety protection for EU citizens. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States. The possible factors that affect the runway width are provided in GM1 ADR-DSN.B.045(b) as it is provided in Note 2 of Paragraph 3.1.10 of Annex 14, Volume I, Aerodromes.

comment *309* comment by: *Bavarian Aviation Authority*

Mit der geplanten Anpassung wird insbesondere die bisher erforderliche Breite der Start- und Landebahn für Code-F Luftfahrzeuge deutlich reduziert. Grundlage dafür waren gemäß Abschnitt 2.3 Studien über den Flugbetrieb großer Luftfahrzeuge an existierenden Flugplätzen. Ob und inwieweit bei der Neuanlage einer Start- und Landebahn die bisher geforderte Breite von 60m weiterhin zumindest empfehlenswert ist, bleibt offen. Eine klärende Ergänzung wird hier für notwendig erachtet.

response Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. The overall paved width required for code F operations remains 60 metres (CS ADR-DSN.B.145(b)). Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

CS ADR-DSN.B.095 p. 25-26

comment *5* comment by: *Flughafen Berlin Brandenburg GmbH*

The current NPA does not foresee a change of CS ADR-DSN.L.565, Runway turn pad markings, section b)(6).

The existing reference to the code letter should be replaced by a reference to the

	applicable OMGWS.
response	Accepted. In paragraph (b)(6) of CS ADR-DSN.L.565 the tabulation is replaced by reference to CS ADR-DSN.B.095(c).

comment	*6* comment by: *Flughafen Berlin Brandenburg GmbH* Please clarify if remarks a) and b) are valid for all OMGWS-categories or not. For certain aircraft types with a rather small OMGWS and a wheel base of more thant 18m there is a risk of misinterpretation of the applicable clearance - e.g. CRJ-1000.
response	Noted. The remarks a) and b) are only applicable for the OMGWS of 6 m up to but not including 9 m only.

comment	*28* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*172* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*271* comment by: *Copenhagen Airports Ltd* **CS ADR-DSN.B.095 Runway turn pads** The criteria for designing a turn pad need not to be restricted by item (f) *"The nose wheel steering angle to be used in the design of the turn pad should not exceed 45 degrees",* as there are no such criteria for turns on taxiways in generel. CPH suggest that item (f) to be deleted.
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment	*281* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*331* comment by: *Bavarian Aviation Authority* see comment CS ADR-DSN.D.240 (comment No. 317)
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

CS ADR-DSN.B.125 p. 26

comment	*29* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*137* comment by: *John Hamshare* The amendments to the width runway shoulders CS is welcomed.
response	Noted.

comment	*173* comment by: *Aerodrome safety regulation departement*

CS ADR-DSN.B.135 is amended in NPA Issue 4 and yet not listed in the amended CS.
Please find hereunder our comments on this specific CS.

Comments :
The value of OMGWS criterion for which the runway shoulders should be prepared or constructed is common to cases (1), (2) and (3).
That's why we suggest to put back up the OMGWS criterion at the very beginning of the CS, as followed :

For aeroplanes with an OMGWS from 9m up to but not including 15m, the runway shoulders should extend symmetrically on each side of the runway so that the overall width of the runway and its shoulders is not less than :
(1) 60 m where the code letter is D or E ;
(2) 60 m where the code letter is F limited to two- or three-engined aeroplanes ;
(3) 75 m where the code letter is F for four (or more) engined aeroplanes.

response Accepted. CS ADR-DSN.B.135 is amended accordingly. CS ADR-DSN.B.125 is also reworded.

comment *282* comment by: *Avinor AS*

Avinor supports the proposed changes.

response Noted.

comment *296* comment by: *Federal Office of Civil Aviation (FOCA), Switzerland*

Comment FOCA to CS ADR-DSN.B.125 Runway shoulders: Runway shoulders should be provided for runway where the code is D, E or F, regardless of the OMGWS.
However in B.135, width of runway shoulders is only defined for aeroplanes with an OMGWS from 9 m up to but not including 15 m.
We suggest to move the criterion of the OMGWS from B.135 (1/2/3) to B.125 (b).

Proposal FOCA:
(b) Runway shoulders should be provided for a runway where the code letter is D, E or F for aeroplanes with an OMGWS from 9 m up to but not including 15 m.

response Accepted. CS ADR-DSN.B.125 is amended accordingly. CS ADR-DSN.B.135 is also reworded.

comment *310* comment by: *Bavarian Aviation Authority*

Code F aircraft were distinguished between two or three and four engines. Since the quantity of code F aircraft is currently not so large, could EASA please specify in detail

	which aircraft were used as reference? Extract explanatory note: "The proposal concerning the width of runway shoulders had been based on a study on the critical jet engine exhaust velocity contours in relation to the engine lateral position and height with the values remaining unchanged at 60m for code D, E and code F aeroplanes with two or three engines, and 75m for code F with four engines." – Were code E aircraft with 4 engines also taken into account? Take-off and landing are particularly safety relevant. Changes to the layout of runway and shoulders need to be checked in adequate detail prior to their implementation. Given descriptions and explanatory statements do not indicate that all safety relevant aspects were considered in the conscientiousness they should have been. Studies and according calculations should be published also.
response	Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States. The requirement for the overall width of the runway including the shoulder for code D, E and F aeroplanes is not less than 60 m, similar to the current provisions. Additionally, for code F aeroplanes, irrespective of the number of engines, the shoulders should be paved to a minimum width of not less than 60 m. For operations of code F aeroplanes with four (or more) engines, the total width of shoulders should be increased to 75 m.

comment	*311* comment by: *Bavarian Aviation Authority* According to the safety objective of runway shoulders, significant factors for planning purposes are aircraft weight, wingspan and the location of the engines. Therefore changing and connecting the requirements to the OMGWS does not seem comprehensible. On the other side it makes the specification far more complex and harder to put it into proportion with other requirements. The number of aircraft that profit from the new regulations (D,E,F with OMGWS smaller than 9m) is very small. Is the effort really worth all the potential confusion, those implemented changes might cause, especially when taking into account that higher code letter aircraft operations was already possible? With the adaptation of the specification it is now possible to operate a 45m wide runway with 15m shoulders on each side. Were all related safety aspects reviewed before publication of the NPA (i.e. visibility of runway during approach – i.e. compared to a 60m wide runway with 7,5m shoulders in each side)?
response	Noted. EASA's mission is to ensure the highest common level of safety protection for EU citizens. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made,

both expert groups, which are composed of members from NAAs and industry, analysed all available studies and working papers. All documents are archived at ICAO and accessible to the Member States. The requirement for the overall width for the runway including shoulder for codes D, E and F aeroplanes is not less than 60 m, similar to the current provisions. Additionally, for code F aeroplanes, irrespective of the number of engines, the shoulders should be paved to a minimum width of not less than 60 m (current provision is that the runway width should be not less than 60 m). For operations of code F aeroplanes with four (or more) engines, the total width of shoulders should be increased to 75 m (which is the same as current requirement).

comment	*333* comment by: *ADV - German Airports Association* Changes to B.135 should also take into account the relation between B747-400 and B747-8 - Code E and F (four engine) with identical outer engine span.
response	Noted: The NPA is proposing to de-correlate the two code letter components of ARC, which is wingspan and Outer Main Gear Wheel Span (OMGWS). This is proposed because the wingspan is relevant for separation distances while OMGWS is relevant to infrastructure requirements, among others, the runway width. Based on this the requirement for overall width for the runway including shoulder for codes D, E and F aeroplanes is not less than 60 m, similar to the current provisions. Additionally, for code F aeroplanes, irrespective of the number of engines, the shoulders should be paved to a minimum width of not less than 60 m. For operations of code F aeroplanes with four (or more) engines, the total width of shoulders should be increased to 75 m (which is also similar to the current provisions).

CS ADR-DSN.B.140 p. 27

comment	*30* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*175* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments

response	Noted.

comment	*283* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*312* comment by: *Bavarian Aviation Authority* The distance of 30m does not seem reasonable. Considering a runway width of 45m and a required shoulder width of 15m on each side (runway + shoulder equals 75m), this means, that only the first 7,50m would have to be capable of supporting an aeroplane running of the runway without inducing structural damage to the aeroplane. The adaptation of the regulation initiates that the second part of the shoulder does not have to be capable of withstanding being run over by an aeroplane, which might eventually also reduce the current safety level.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States. The intent of the proposals is to replace the current code F runway width requirement of 60 m by a combination of a 45 m wide full strength runway and 7.5 m paved shoulders on each side to cope with potential excursions. The overall 60 m paved width (runway plus shoulder) minimises damage to aeroplanes veering-off and allows emergency vehicles to access the aeroplane, as per CS ADR-DSN.B.140. Additional (not necessarily paved) shoulders of 7.5 m each side outside the 60 m for jet blast erosion are only needed for aeroplanes having four engines which is in line with the proposals provided in CS ADR-DSN.B.125 and CS ADR-DSN.B.135.

CS ADR-DSN.B.145 p. 27

comment	*31* comment by: *Gatwick Airport* Agree

response	Noted.

comment	*176* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*313* comment by: *Bavarian Aviation Authority* ICAO design manuals indicate that runway shoulders ought to be paved. Existing Code F regulations required for a runway width of 60m and shoulders of 7,50m on each side. Therefore the paved area extended to an overall width of 75m. With the change suggested by EASA for Code F operation the paved surface will be reduced to 60m, leading to 15m of unpaved shoulders. Especially since the safety critical meaning of take-offs and landings and the hazard of ingestion of stones and gravel, this decision should be reevaluated or explained in further detail supported by the underlying studies and calculations. Also the wording of (b) should be reconsidered, since it might initiate that shoulders for code letter D and E aircraft need not to be paved, which would contribute to an even more questionable outcome for safety.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and working papers. All documents are archived at ICAO and accessible to the Member States. The intent of the proposals is to replace the current code F runway width requirement of 60 m by a combination of a 45m wide full strength runway and 7.5 m paved shoulders on each side to cope with potential excursions. The overall 60 m paved width (runway plus shoulder) minimises damage to aeroplanes veering-off and allows emergency vehicles to access the aeroplane, as per CS ADR-DSN.B.140. Additional (not necessarily paved) shoulders of 7.5 m each side outside the 60 m for jet blast erosion are only needed for aeroplanes having four engines which is in line with the proposals provided in CS ADR-DSN.B.125 and CS ADR-DSN.B.135. In the current certification specifications for aerodromes design there is no requirement for the paved runway shoulders. Also, ICAO Annex 14, Volume I, Aerodromes does not refer to the paved runway shoulders (3.2.5 Recommendation. A runway shoulder should be prepared or constructed so as to be capable, in the event of an aeroplane running off the runway, of supporting the aeroplane without inducing structural damage to the aeroplane and of supporting ground vehicles which may operate on the shoulder). ICAO Doc 9157, Aerodrome Design Manual Part 1, Runways refers to paved shoulders only in paragraph

5.2.1, but not as the requirement: 'Runway shoulders must be provided to ensure a transition from the full strength pavement to the unpaved strip of the runway. The paved shoulders protect the edge of the runway pavement, contribute to the prevention of soil erosion by jet blast and mitigate foreign object damage to jet engines'. ICAO Circular 305 AN/177 Operation of new larger aeroplanes at existing aerodromes refers to paved shoulders in paragraph 4.13 (a): 'paved inner shoulders of adequate bearing strength to provide an overall width of the runway' and in 4.13 (c) outer paved/stabilised shoulders with adequate bearing strength to provide an overall width of the runway and its shoulder of 75 m.

comment *346* comment by: *Geneva Airport*

Pave the shoulder up to 60m is huge works and extraordinary costs for a real low safety benefit, especially if we consider that :
- the surface is already made to resist and exempt of FOD,
- the need of fully relamping,
- it is not consistant with the philosophy of reducing other margins

response Noted. The proposed requirement for the surface of runway shoulders only refers to code F aeroplanes: '(b) Runway shoulders for code letter F aeroplanes should be paved to a minimum overall width of runway and shoulder of not less than 60 m'. The previous requirement for runway width for the operation of code F aeroplanes was 60 m full strength pavement in addition to shoulders.

CS ADR-DSN.B.150 p. 27

comment *32* comment by: *Gatwick Airport*

Agree

response Noted.

comment *178* comment by: *Aerodrome safety regulation departement*

Comments :
The safety objectives mentioned in the definition of the runway strip (CS ADR-DSN.A.002) are inconsistent with the safety objectives mentioned in the CS ADR-DSN.B.150 (a) Runway strip to be provided. In particular, the objective of safe using of RFF vehicles is

mentioned in § (a) of the CS but not mentioned in the definition.

CS ADR-DSN B.150
(a) The safety objective of the runway strip is to reduce the probability of damage to an aircraft accidentally running off the runway, to protect aircraft flying over it when taking-off or landing, and to enable safe use by rescue and firefighting (RFF) vehicles.

Definition
'Runway strip' means a defined area including the runway and stopway, if provided, intended:
— to reduce the risk of damage to aircraft running off a runway; and
— to protect aircraft flying over it during take-off or landing operations.

This inconsistency should be noted but may not be fixed before the outcome of the revision of Annex 14 OLS (Ch.4) and physical caracteristics (chap. 3 and paras 9.9), notably the proposed disconnection of the protection of aircraft flying objective which should be fulfilled by the OLS while the reduction of aircraft damage running off the runway should be the sole objective of the runway strip.

response Accepted. Text of CS ADR-DSN B.150(a) is amended by replacing the word 'probability' with 'risk'.

comment *284* comment by: *Avinor AS*

Avinor supports the proposed changes.

response Noted.

CS ADR-DSN.B.160 p. 27-28

comment *33* comment by: *Gatwick Airport*

Agree

response Noted.

comment *41* comment by: *CAA-NL*

CS ADR-DSN.B.160 Width of runway strip
It propose to change the strip width for the various code numbers. This ultimately has

consequences for the obstacle limitation surfaces, specifically outside the boundaries of the airfield. ICAO State Letter (AN 4/1.1.57-17/44) van 19 April 2017, Proposals for the amendment of Annex 14, Volume I and PANS-Aerodromes (Doc 9981) introduces similar changes. ICAO however included a remark that this was not the intention:

"The Obstacle Limitation Surface Task Force (OLSTF) has agreed that this proposed reduction concerning the width of runway strip could be made independently of the ongoing research by the OLSTF regarding Chapter 4 of Annex 14, Volume I. This endorsement by OLSTF is in line with the latter's proposal to remove the linkage between runway strip widths and the future OLS for instrument runways."

We advice to add a similar note into the EASA CS.

response Noted. The above text is provided by OLS TF as rationale in the State letter 17/44 with which we agree. However, this text cannot be included in the CS/ GM requirements as it is not part of the proposed amended rule.

comment *42* ❖ comment by: *UK CAA*

Page No: 10 and 27, **CS ADR-DSN.B.160 Width of Runway Strip**

Paragraph No: Fifth Para on page 10, Para 10 on page 27

Comment: As a result of amending the width of runway strips there is a consequential change to the origin of the transitional surface and subsequently all of the Obstacle Limitation Surfaces (OLS). This consequential change should be highlighted to a greater degree.

Justification: In the UK and other States the OLS are used as part of aerodrome safeguarding in conjunction with local authority planning departments. As a result of the change all the safeguarding maps will need to be amended and a number of UK CAA CAPs will require revision. Additionally there is a proposed change from the ICAO OLTF (Obstacle Limitation Task Force) to further reduce the strip width to possibly 75 metres in a few years time resulting in a further change.

Proposed Text: Ensure in the NPA summary that the consequential changes to the OLS are better highlighted as a result of the reduction of runway strip width.

response Noted: The ARC TF and EASA considered that based on modern aeroplane performance and improvements in aeroplane avionics and flight controls, the values of the runway strip width for precision approach runways and non-precision approach runways could be safely reduced from 150 m to 140 m from the runway centre line, where the code number is 3 or 4, and from 75 m to 70 m, from the runway centre line, where the code number is 1 or 2. The justification is based on several sources from ACI, some airports studies, FAA, Transport Canada, etc. Due to the runway strip width reduction the location of Transitional Surface is also moved to a distance of 140 m or 70 m accordingly. The dimensions specified in CS ADR-DSN.B.160(a) and (b) are minimum required distances ('…

	should extend laterally to a distance of at least:'). These dimensions can be kept at the current (higher) values if so decided and accepted by the aerodrome operator, local land use planning and other authorities. The ICAO Obstacle Limitation Surfaces Task Force (OLS TF) confirmed that this proposed reduction could be made independently of the ongoing research by the OLS TF regarding Chapter 4 of Annex 14, Volume I, Aerodromes.

comment	*138* comment by: *John Hamshare* These amendments to width of runway strip are particularly helpful and welcomed.
response	Noted.

comment	*164* comment by: *Swedish Transport Agency* Changing the width of the runway strip will have consequences for the obstacle limitation surfaces. This must Member States and Aerodrome Operators take in count.
response	Noted.

comment	*177* comment by: *Aerodrome safety regulation departement* PANS-OPS (Doc 8168 Vol II) part I, section 3, Chapter 4 paragraph 4.3.2 requires identification of obstacles inside the departure turn area whose width is equivalent to the strip's width for code 3 and 4 runways. Additional inconsistency might therefore appear between OLS and PANS-OPS protection surfaces at departure if the width of the strip is reduced to 280m without analysing PANS-OPS wording and requirements.
response	Noted. ICAO SL 17/44 is also proposing reductions to the length of the inner edge of the approach surface. Coordination between PANS-OPS, Doc 8168 provisions and Annex 14 SARPs is part of the ICAO OLS Task Force.

comment	*285* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*314* comment by: *Bavarian Aviation Authority* We consider this change inappropriate, especially according to its benefit. Reducing the distance of the safety margin by 10m, EASA clearly needs to state whether all possible consequences have to be considered and assessed related to hazards and risks. Adaptations to the strip lead to changes of approach surface, inner transitional and transitional surface, meaning higher obstacles will move closer to runways and taxiways. Was the effect of changing the transitional surface also assessed taking into account obstacles for starting and landing aircraft as well as possible negative consequences for equipment and infrastructure used by air navigation services? Did EASA asses the effect of mobile objects and equipment moving closer to the runway in future? Was the reduced safety margin for aeroplanes running off the runway assessed? Similar to the proposed change of the ARC, the reduction of the runway strip will also lead to a differing definition of established aviation terms on international and supranational level, which might lead to confusion and misinterpretation and therefore contradicting the initial idea of safety.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States. The ARC TF and EASA considered that based on modern aeroplane performance and improvements in aeroplane avionics and flight controls, the values of the runway strip width for precision approach runways and non-precision approach runways could be safely reduced from 150 m to 140 m from the runway centre line, where the code number is 3 or 4, and from 75 m to 70 m, from the runway centre line, where the code number is 1 or 2. The justification is based on several sources from ACI, some airports studies, FAA, Transport Canada, etc. Due to the runway strip width reduction the location of Transitional Surface is also moved to a distance of 140 m or 70 m accordingly. The dimensions specified in CS ADR-DSN.B.160(a) and (b) are minimum required distances (‘… should extend laterally to a distance of at least :’). These dimensions can be kept at the current (higher) values if so decided and accepted by the aerodrome operator, local land use planning and other authorities. The ICAO Obstacle Limitation Surfaces Task Force (OLS TF) confirmed that this proposed reduction could be made independently of the ongoing research by the OLS TF regarding Chapter 4 of Annex 14, Volume I, Aerodromes.

comment	*315* comment by: *Bavarian Aviation Authority* Es werden Untersuchungen (some researches) erwähnt, mit der die geplante Reduktion des Streifens von 150m auf 140m begründet wird. Wir halten es für notwendig, dass die

	Untersuchungen explizit benannt werden. Ohne diesen klaren Bezug ist für uns die vorgeschlagene Reduktion nicht vollständig nachvollziehbar. Auch der Bezug zu möglichen Änderungen auf ICAO-Ebene ist für uns nicht abschließend klar.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and working papers. All documents are archived at ICAO and accessible to the Member States. The ARC TF and EASA considered that based on modern aeroplane performance and improvements in aeroplane avionics and flight controls, the values of the runway strip width for precision approach runways and non-precision approach runways could be safely reduced from 150 m to 140 m from the runway centre line, where the code number is 3 or 4, and from 75 m to 70 m, from the runway centre line, where the code number is 1 or 2. The justification is based on several sources from ACI, some airports studies, FAA, Transport Canada, etc. Due to the runway strip width reduction the location of Transitional Surface is also moved to a distance of 140 m or 70 m accordingly. The dimensions specified in CS ADR-DSN.B.160(a) and (b) are minimum required distances ('… should extend laterally to a distance of at least :'). These dimensions can be kept at the current (higher) values if so decided and accepted by the aerodrome operator, local land use planning and other authorities. The ICAO Obstacle Limitation Surfaces Task Force (OLS TF) confirmed that this proposed reduction could be made independently of the ongoing research by the OLS TF regarding Chapter 4 of Annex 14, Volume I, Aerodromes.

CS ADR-DSN.B.175 p. 28

comment	*34* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*179* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*286* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*316* comment by: *Bavarian Aviation Authority* Up to now the graded portion of the strip was exactly half of the overall width of the strip. Reducing the width of the strip but not that of the graded portion seemingly leads to an imbalance.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and working papers. All documents are archived at ICAO and accessible to the Member States. That portion of the runway strip to be graded is defined by CS ADR-DSN.B.175, which is 75 m for the instrument runways where the code number is 3 or 4. GM1 ADR-DSN.B.175 provides recommendation that for a precision approach runway, where the code number is 3 or 4, extend that portion of a strip to be graded to a distance of 105 m. This distance is gradually reduced to 75 m from the centre line at both ends of the strip. This allows for the extremely improbable deviation of an aeroplane from the runway to the edge of the graded portion of the strip.

CS ADR-DSN.D.240 p. 28-29

comment	*35* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*39* comment by: *Wideroe Flyveselskap AS* Attachments #1 #2 #3 #4 WIDERØE COMMENT TO EASA NPA 2017-04 CS ADR-DSN.D.245 Width of taxiways This CS stipulates that taxiway width for aircraft with OMGWS 9m up to but not including 15m shall be 23m. For the DHC-8-400 this is very restrictive. The DHC-8-400 OMGWS is 9.52m (while the distance between the main wheel axles is 8.8m). This means that minimum allowed taxiway width is 23m. Widerøe has routinely operated the DHC-8-400 on 15m taxiways, which is unproblematic as shown on the below illustration. The DHC-8-400 has a wheel base of 14.0m (nose gear to main gear distance), and therefore the main gear will stay well clear of taxiway edge. It is illogical that the DHC-8-400 should have the stricter requirements for taxiway width than e.g. the Boeing 757-300 which - according to ICAO PANS Aerodromes Doc 9981,1st ed. 2015 - has a wheel span of 8.6m and a wheel base of 22.3m. We would therefore suggest that the shorter wheel base for the DHC-8-400 could be credited to allow opertion on taxiway of 15m width. Attached are sketches comparing the DHC-8-400 turns compared with larger aircraft.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States. In accordance with the current requirements of CS ADR-DSN.A.005, paragraph (d) 'The code letter for element 2 should be determined from Table A-1, column (3), by selecting the code letter which corresponds to the greatest wingspan, or the greatest outer main gear wheel span whichever gives the more demanding code letter of the aeroplanes for which the facility is intended'. Therefore, the code letter for the Dash-8-400 should have been D since the OMGWS is the most demanding element. Current requirement of CS ADR-DSN.D.245 for taxiway width for code letter D aeroplanes is 23 m if the taxiway is intended to be used by aeroplanes with an OMGWS equal to or greater than 9 m, which is the same requirement as in paragraph 3.9.4 of ICAO Annex 14, Volume I, Aerodromes.

	For OMGWS between 9 m and up to but not including 15 m (i.e. the case of Dash-8-400) the proposal is for a taxiway width of no less than 23 m. Therefore, the proposed amendment in this NPA regarding the taxiway width is identical to the current requirements of both EASA and ICAO. Bombardier, Airport Planning Manual for Dash 8 Series 400 indicates the width of the taxiway of 23 m.

comment	*139* comment by: *John Hamshare* This amendment is welcomed and reflects more accurately the design requirements for curved protions of taxiways.
response	Noted.

comment	*166* comment by: *Bombardier* As with the minimum runway specification, the DHC-8-400 and similarly configured aircraft will face additional operational restrictions with the proposal that defines minimum taxiway width solely on OMGWS. We do not support a requirement based solely on aircraft OMGWS unless this can better accommodate aircraft with alternate configurations such as the DHC-8-400.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States. In accordance with the current requirements of CS ADR-DSN.A.005, paragraph (d) 'The code letter for element 2 should be determined from Table A-1, column (3), by selecting the code letter which corresponds to the greatest wingspan, or the greatest outer main gear wheel span whichever gives the more demanding code letter of the aeroplanes for which the facility is intended'. Therefore, the code letter for the Dash-8-400 should have been D since the OMGWS is the most demanding element. Current requirement of CS ADR-DSN.D.245 for taxiway width for code letter D aeroplanes is 23 m if the taxiway is intended to be used by aeroplanes with an OMGWS equal to or greater than 9 m, which is the same requirement as in paragraph 3.9.5 of ICAO Annex 14, Volume I, Aerodromes. For OMGWS between 9 m and up to but not including 15 m (i.e. the case of Dash-8-400) the proposal is for a taxiway width of no less than 23 m. Therefore, the proposed

	amendment in this NPA regarding the taxiway width is identical to the current requirements of both EASA and ICAO. Bombardier, Airport Planning Manual for Dash 8 Series 400 indicates the width of the taxiway of 23 m.

comment	*180* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*287* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*297* comment by: *Federal Office of Civil Aviation (FOCA), Switzerland* *Comment FOCA to CS ADR-DSN.D.240 Taxiways general:* For aeroplanes with an OMGWS from 6 m up to but not including 9 m, clearance distance is theoretically only defined for curved portions due to the footnotes *a* and *b*. We suggest to complete the footnote *a* in a way to say that 3 m is also for straight portions. **Proposal FOCA:** (a) [a] on straight portions and on curved portions if the taxiway is intended to be used by aeroplanes with a wheel base of less than 18 m.
response	Accepted. The text is amended accordingly.

comment	*317* comment by: *Bavarian Aviation Authority* The explanation to this change states that “numerous studies performed mostly for codes C, D and E aeroplanes on code D and E taxiways indicate that current taxiway safety margins are conservative”. Especially since it is our task to evaluate and monitor aerodromes within our responsibility, it is essential for us to understand the reasons of

	the implemented change and therefore according studies, calculations and methodologies. Explanations given by EASA in chapters 1 and 2 are not precise enough to achieve this. Changes should therefore be traceable in more detail.
response	Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

CS ADR-DSN.D.245 p. 29-30

comment	*7* comment by: *Flughafen Berlin Brandenburg GmbH* The proposed version of D.245 is more demanding in terms of main gear clearance than the amended requirements of CS ADR-DSN.D.240, section (a). Example: The OMGWS of a B747-400 is 12.6m. The minimum clearance distance is 4m, resulting in an overall taxiway width for the B747-400 of 12.6m + 2 x 4m = 20.6m. Contrary to this, D.245 demands a taxiway width of 23m for a B747-400. Proposal: Delete D.245 entirely, as all critical design and protection requirements are contained within D.240
response	Not accepted. The values provided in CS ADR-DSN.D.245 for the minimum taxiway widths are based on the calculation of the OMGWS adding clearance distance from wheel to pavement edge and maximum lateral deviation from the taxiway centre line for the selected code letter. As defined in CS ADR-DSN.D.240, paragraph (a) the design of a taxiway should be such that, when the cockpit of the aeroplane for which the taxiway is intended remains over the taxiway centre line markings, a clearance distance between the outer main wheel of the aeroplane and the edge of the taxiway should be provided. These minimum clearance distances should be provided also on different taxiway junctions and intersections where the main gear of the aeroplane does not follow the curved contour of the taxiway centre line marking. The values provided in CS ADR-DSN.D.245 are also used for the design of fillets for different junctions on runways, aprons and taxiways.

comment	*38* comment by: *Wideroe Flyveselskap AS* Attachments #5 #6 WIDERØE COMMENT TO EASA NPA 2017-04 CS ADR-DSN.D.245 Width of taxiways This CS stipulates that taxiway width for aircraft with OMGWS 9m up to but not including 15m shall be 23m. For the DHC-8-400 this is very restrictive. The DHC-8-400 OMGWS is 9.52m (while the distance between the main wheel axles is 8.8m). This means that minimum allowed taxiway width is 23m. Widerøe has routinely operated the DHC-8-400 on 15m taxiways, which is unproblematic as shown on the below illustration. The DHC-8-400 has a wheel base of 14.0m (nose gear to main gear distance), and therefore the main gear will stay well clear of taxiway edge. It is illogical that the DHC-8-400 should have the stricter requirements for taxiway width than e.g. the Boeing 757-300 which - according to ICAO PANS Aerodromes Doc 9981,1st ed. 2015 - has a wheel span of 8.6m and a wheel base of 22.3m. We would therefore suggest that the shorter wheel base for the DHC-8-400 could be credited to allow operation on tzxiway of 15m with. Attached are sketches comparing the DHC-8-400 turns compared with larger aircraft.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States. In accordance with the current requirements of CS ADR-DSN.A.005, paragraph (d) 'The code letter for element 2 should be determined from Table A-1, column (3), by selecting the code letter which corresponds to the greatest wingspan, or the greatest outer main gear wheel span whichever gives the more demanding code letter of the aeroplanes for which the facility is intended'. Therefore, the code letter for the Dash-8-400 should have been D since the OMGWS is the most demanding element. Current requirement of CS ADR-DSN.D.245 for taxiway width for code letter D aeroplanes is 23 m if the taxiway is intended to be used by aeroplanes with an OMGWS equal to or greater than 9 m, which is the same requirement as in paragraph 3.9.4 of ICAO Annex 14, Volume I, Aerodromes.

For OMGWS between 9 m and up to but not including 15 m (i.e. the case of Dash-8-400) the proposal is for a taxiway width of no less than 23 m. Therefore, the proposed amendment in this NPA regarding the taxiway width is identical to the current requirements of both EASA and ICAO.

Bombardier, Airport Planning Manual for Dash 8 Series 400 indicates the width of the taxiway of 23 m.

comment

43 comment by: *ERAA*

Attachment #7

WIDERØE COMMENT TO EASA NPA 2017-04

CS ADR-DSN.D.245 Width of taxiways

This CS stipulates that taxiway width for aircraft with OMGWS 9m up to but not including 15m shall be 23m.

For the DHC-8-400 this is very restrictive. The DHC-8-400 OMGWS is 9.52m (while the distance between the main wheel axles is 8.8m). This means that minimum allowed taxiway width is 23m.

Widerøe has routinely operated the DHC-8-400 on 15m taxiways, which is unproblematic as shown on the below illustration.

The DHC-8-400 has a wheel base of 14.0m (nose gear to main gear distance), and therefore the main gear will stay well clear of taxiway edge.

It is illogical that the DHC-8-400 should have the stricter requirements for taxiway width than e.g. the Boeing 757-300 which - according to ICAO PANS Aerodromes Doc 9981,1st ed. 2015 - has a wheel span of 8.6m and a wheel base of 22.3m.

We would therefore suggest that the shorter wheel base for the DHC-8-400 could be credited to allow operations on taxiways of 15m width.

The Attached document contains sketches comparing the DHC-8-400 turns compared with larger aircraft.

response

Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to

	the Member States. In accordance with the current requirements of CS ADR-DSN.A.005, paragraph (d) 'The code letter for element 2 should be determined from Table A-1, column (3), by selecting the code letter which corresponds to the greatest wingspan, or the greatest outer main gear wheel span whichever gives the more demanding code letter of the aeroplanes for which the facility is intended'. Therefore, the code letter for the Dash-8-400 should have been D since the OMGWS is the most demanding element. Current requirement of CS ADR-DSN.D.245 for taxiway width for code letter D aeroplanes is 23 m if the taxiway is intended to be used by aeroplanes with an OMGWS equal to or greater than 9 m, which is the same requirement as in paragraph 3.9.4 of ICAO Annex 14, Volume I, Aerodromes. For OMGWS between 9 m and up to but not including 15 m (i.e. the case of Dash-8-400) the proposal for the taxiway width is not less than 23 m. Therefore, the proposed amendment in this NPA regarding the taxiway width is identical to the current requirement of both EASA and ICAO. Bombardier's Airport Planning Manual for Dash 8 Series 400 indicates the width of the taxiway of 23 m. Aerodrome operator has the possibility to assess the performance credits of DHC-8-400 and to propose one of the flexibility provisions to operate the aeroplane at the aerodrome infrastructure where the airline operator is already providing safe operations with DHC-8-400.

comment	*44* comment by: *Gatwick Airport* Agree with changes. This is seen as a very positive improvement.
response	Noted.

comment	*140* comment by: *John Hamshare* This amendment is welcomed and reflects more acurately the design requirements for straight portions of taiways.
response	Noted.

comment	*181* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*288* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*318* comment by: *Bavarian Aviation Authority* The reference to solely the OMGWS enables larger aeroplanes to operate on smaller taxiways. While proposing this change, were all necessary wingspan related aspects such as location of the engines considered by an according safety assessment?
response	Noted. CS ADR-DSN.D.245 refers to taxiway width, while the taxiway minimum separation distance are defined in CS ADR-DSN.D.260

CS ADR-DSN.D.260 p. 30-31

comment	*45* comment by: *Gatwick Airport* Agree with changes
response	Noted.

comment	*141* comment by: *John Hamshare* The proposed amendments and reduced taxiway separation distances is welcomed.
response	Noted.

comment	*182* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*289* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*319* comment by: *Bavarian Aviation Authority* Were parameters regarding obstacles and potential consequences for air navigation service facilities and equipment also assessed?
response	Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

CS ADR-DSN.D.305 p. 31

comment	*46* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*142* comment by: *John Hamshare* The proposed amendments to taxiway shoulder dimensions are welcomed.
response	Noted.

comment	*183* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments

response	Noted.

comment	*290* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*320* comment by: *Bavarian Aviation Authority* The suggested change initiates a massive reduction of safety margins used by ICAO, yet the explanatory statement does not really contribute to the understanding of the adaptation. How were this new values calculated. How were safety hazards and risks assessed? What was the exact outcome? EASA should make the principles for suggested changes more transparent and traceable.
response	Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

comment	*334* comment by: *ADV - German Airports Association* The justification for changing D.305 mentions an analysis "of the outer engines [...]". We are not aware of this data and request access to the relevant documents for a better understanding of the proposed changes.
response	Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

CS ADR-DSN.D.325 p. 31

comment	*47* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*143* comment by: *John Hamshare* The porposed amendments to graded areas of taxiway strips is welcomed.
response	Noted.

comment	*184* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*291* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*321* comment by: *Bavarian Aviation Authority* The suggested change initiates a massive reduction of safety margins used by ICAO, yet the explanatory statement does not really contribute to the understanding of the adaptation. How were this new values calculated. How were safety hazards and risks assessed? What was the exact outcome? EASA should make the principles for suggested changes more transparent and traceable.
response	Noted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on

accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

CS ADR-DSN.J.480 p. 32-34

comment	*8* comment by: *Flughafen Berlin Brandenburg GmbH* The cross-reference might be amended as well, as the proposed change to CS Issue 4 deletes column 3. A better wording might be "Where the code letter is F (code element 2 of Table A-1), the width is increased to 140m."
response	Accepted. Text is amended as follows: 'Where the code letter is F (Code element 2 of Table A-1), the width is increased to 140 m'.

comment	*48* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*144* comment by: *John Hamshare* The proposed reduction in the length of the inner edge of the approach surface is welcomed. We would also like to see the consequential impact of this on other obstacle limitation surfaces to be highlighted, i.e. the fact that transitional surfaces will start closer to the extended centreline and will therefore impact on OLS height restrictions.
response	Noted. Coordination between Annex 14 SARPs and PANS-OPS provisions is part of the ICAO OLS Task Force.

comment	*185* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments

response	Noted.

comment	*292* comment by: *Avinor AS* Avinor supports the proposed changes.
response	Noted.

comment	*298* comment by: *Federal Office of Civil Aviation (FOCA), Switzerland* *Comment FOCA to Table J-1. Dimensions and slopes of obstacle limitation surfaces - Approach runways:* In Footnote e., the reference to Column (3) of Table A-1 should be removed. **Proposal FOCA:** e. Where the code letter is F (~~Column (3) of~~ Table A-1), the width is increased to 140 m.
response	Accepted. Text is amended as follows: 'Where the code letter is F (code element 2 of Table A-1), the width is increased to 140 m'

comment	*322* comment by: *Bavarian Aviation Authority* The purpose of the approach surface is to protect an aircraft during the final approach to the runway by defining the area that should be kept free from obstacles to protect an aeroplane in the final phase of the approach-to-land maneuvre. The purpose of the transitional surface is to define the limit of the area available for buildings, other structures or natural obstructions, such as trees. By reducing the width of the strip, the layout of approach surface and transitional surface are likewise affected. Obstacles will move closer to the runway, although the aircraft types starting and landing at the aerodrome remain the same. Reducing the safety margin to this amount while considering the given explanatory notes, this adaptation is not really comprehensible, especially taking account the safety relevance of runways and obstacle limitation surfaces. Again EASA chose to deviate from ICAO standards, while on the first view, seemingly contradicting the goal of raising safety. Also see comment on CS ADR-DSN.B.160 Width of runway strip.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted both by the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on

accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

The ARC TF and EASA considered that based on modern aeroplane performance and improvements in aeroplane avionics and flight controls, the values of the runway strip width for precision approach runways and non-precision approach runways could be safely reduced from 150 m to 140 m from the runway centre line, where the code number is 3 or 4, and from 75 m to 70 m, from the runway centre line, where the code number is 1 or 2. The justification is based on several sources from ACI, some airports studies, FAA, Transport Canada, etc. Due to the runway strip width reduction the location of Transitional Surface is also moved to a distance of 140 m or 70 m accordingly. The dimensions specified in CS ADR-DSN.B.160(a) and (b) are minimum required distances ('… should extend laterally to a distance of at least :'). These dimensions can be kept at the current (higher) values if so decided and accepted by the aerodrome operator, local land use planning and other authorities. The ICAO Obstacle Limitation Surfaces Task Force (OLS TF) confirmed that this proposed reduction could be made independently of the ongoing research by the OLS TF regarding Chapter 4 of Annex 14, Volume I, Aerodromes.

comment *323* comment by: *Bavarian Aviation Authority*

Mit dem Vorschlag reduziert sich die Breite des „Inner Approach" für Code F Luftfahrzeuge von 155m auf 140m. Es wäre konsequent und in sich stimmig, wenn der Wert in CS ADR-DSN.B.165(b)(1) dann ebenfalls von 77,5m auf 70m reduziert werden würde. Hier läge sonst ein Widerspruch innerhalb der Normen vor.

response Not accepted. It is not evident that there is a clear link between the two values. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

CS ADR-DSN.L.605 p. 35

comment *49* comment by: *Gatwick Airport*

Agree

response Noted.

comment	*186* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*273* comment by: *Aena Aeropuertos, S.A.* The calculations required to obtaining the marking separations are relatively complex considering the low implication the spacing has in the airport operations. A more simple solution should be implemented. "NO ENTRY" signs, characters and spacing standards have been changed; due to the large number of signs and markings existing at the airport, the rule should indicate a reasonable period of time within which to adjust the future designs to the new requirements, and if the rule applies to the existing ones.
response	Not accepted. The proposed amendment is in line with ICAO Amendment 13-A to Annex 14 which is already adopted and applicable. The aerodrome operator has the possibility to use one of the flexibility tools and to consider its justification and appropriateness.

CS ADR-DSN.L.610 p. 35-45

comment	*50* comment by: *Gatwick Airport* Wiil provide consistent approach to markings
response	Noted.

comment	*187* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*274* comment by: *Aena Aeropuertos, S.A.* The calculations required to obtaining the marking separation are very complex despite

	the low implication the markings spacing has in the airport operations. A more simple solution should be used.
response	Noted. The proposed amendment is in line with ICAO Amendment 13-A to Annex 14 which is already adopted and applicable. The aerodrome operator has the possibility to use one of the flexibility tools and to consider its justification and appropriateness.

comment	*324* comment by: *Bavarian Aviation Authority* While working on the certification specifications EASA might want to consider reevaluating the requirements on the size of information markings. Especially for aerodromes with low or medium sized aircraft (average ICAO class A to C) a height of 4m for information markings seems disproportionately huge. For direction markings 4m would result in markings that extend up to 30-40m in width. By having bundled the Categories C, D, E, F it is questionable whether it makes sense for an airport with classes A,B and C only to have 4m inscriptions for markings. Rather than raising the safety level it has to be questioned whether aircraft class A and B would be able to read the whole marking due to the size of the aircraft and the eye height of the pilot in command. Up to now this problem was not much of an issue, since it was only an ICAO recommendation and could be adapted by airports individually. Even if only as note within the guidance material, it would be reasonable to assess under which circumstances (i.e. C class aircraft) standardized deviations might be acceptable.
response	Not accepted. The proposed amendment is in line with ICAO Amendment 13-A to Annex 14 which is already adopted and applicable. The aerodrome operator has the possibility to use one of the flexibility tools and to consider its justification and appropriateness. The proposed amendment was also discussed among NAAs and aerodrome operators and agreed during the Visual Aids thematic meeting. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

comment	*339* comment by: *Fraport AG* L.610 (b)(4) The spacing of characters for information markings could not refer to CS ADR-DSN.L.605(c)(6), because CS ADR-DSN.L.605(c)(6) only refers to mandatory instruction markings. <u>*suggestion*</u> The spacing of characters for information markings should be as specified ***in Table N-3 (c)***.
response	Accepted. The text is amended as follows: The spacing of characters for information marking should be as specified in Table N-3(c). CS ADR-DSN.L.605 (c)(6).

CS ADR-DSN.M.630 p. 46-47

comment	*51* comment by: *Gatwick Airport* No Comment
response	Noted.

comment	*188* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.635 p. 47-48

comment	*52* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*189* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.645 p. 48-49

comment	*53* comment by: *Gatwick Airport* no comment
response	Noted.

comment	*190* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.655 p. 49-52

comment	*54* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*145* comment by: *John Hamshare* It may be more appropriate to add 'where practicable' or 'where possible' to item (1) remove the object. The inclusion of alternative mitigations clearly implies that removing the object may not be possible.
response	Not accepted. Item (1) is just one of the available mitigating measures.

comment	*191* comment by: *Aerodrome safety regulation departement* Proposed line (d) (5) of CS ADR-DSN.M.655 is now inconsistent with Annex 14 article 5.3.5.46 where this provision has been removed. It is indeed inadequate since the introduction of criterion D1. Because if an existing object extends above an obstacle protection surface, the displacement of the threshold will have no effect on the position of the inner edge since the latter is located in reference to the PAPI. We thus suggest to remove line (d) (5) and renumber line (d) (6) into line (d) (5).

response	Not accepted. Item (5) is one of the available mitigating measures, although by displacing the threshold the PAPI unit along with the obstacle protection surface have to be removed.

comment	*275* comment by: *Aena Aeropuertos, S.A.* The item "Lenght of inner edge" given in the table M-2 should be modified according with the stripe new sizing (CS ADR-DSN.B.160) and SLO (CS ADR-DSN.J480).
response	Not accepted. Obstacle protection surface for PAPI and APAPI remains unchanged. The subject has not yet been discussed at ICAO level. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

comment	*295* comment by: *Fraport AG* Within issue 3 the length of the inner edge of the obstacle protection surface according to table M-2 is equal to the length of the inner edge of the approach surface. This is illustrated in figure M-6. Considering the proposed reduction of the width of runway strip and inner edge of the approach surface (CS ADR-DSN.B.160 and CS ADR-DSN.J.480 table J-1) ***it would be logical and necessary to reduce the inner edge of the PAPI obstacle protection surface***, so that figure M-6 stays valid. Changing figure M-6 and not changing M.655 table M-2 would be the wrong option, because the system of the protection surfaces would become be highly complicated.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44). Obstacle protection surface for PAPI and APAPI remains unchanged. The subject has not yet been discussed at ICAO level. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

CS ADR-DSN.M.665 p. 52-53

comment	*55* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*192* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.670 p. 53

comment	*56* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*146* comment by: *John Hamshare* This amendment is welcomed, as is the inclusion of the first listed point that the specification does not imply that these light have to be provided.
response	Noted.

comment	*193* comment by: *Aerodrome safety regulation departement* **Comments** : The formulation of the CS ADR-DSN.M.670 does not allow aerodrome operators to keep threshold identification lights on precision runways without asking for an alternative solution (SC, ELOS). We would find it relevant to modify the CS as follows, in order to allow aerodrome operators to keep these equipment when already installed and at the same time, be sure to remain compliant with the new CS. (2) Where provided, runway threshold identification lights should be installed : (i) ~~at the threshold of a non-precision approach runway~~ when additional threshold conspicuity is necessary or where it is not practicable to provide other approach lighting aids, in particular at the threshold of a non-precision approach runway; (ii) where a runway threshold is permanently displaced from the runway extremity or temporarily displaced from the normal position and additional threshold conspicuity is necessary.

response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

CS ADR-DSN.M.675 p. 53

comment	*57* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*194* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.680 p. 53-54

comment	*58* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*195* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.685 p. 54

comment	*59* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*196* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.690 p. 54

comment	*60* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*197* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.695 p. 54

comment	*61* comment by: *Gatwick Airport*

	No comment
response	Noted.

comment	*198* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.696 p. 55

comment	*62* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*199* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.700 p. 55

comment	*13* comment by: *Amsterdam Airport Schiphol - AMS/EHAM (and D.A.A)* CS ADR-DSN.M.700 (c) (2) The objective mentioned in CS ADR-DSN.M.700 under point (c)(2) is deemed to be too technical. It is unnecessary to use the term "power on a separate circuit". There is technically no need to put this system on a separate circuit putting large infrastructure costs with airports. This while a addressable lighting system is capable of switching these lights on while other AGL systems remain switched off.

	New text proposal: *"RETILs should be able to switch on and off separate from other runway lighting so that they may be used when other lighting is switched off."*
response	Not accepted. The proposed relocation of this text from GM to CS has been discussed and agreed during the Visual Aids thematic meeting. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

comment	*63* comment by: *Gatwick Airport* Agreed
response	Noted.

comment	*147* comment by: *John Hamshare* This amendment is welcomed, as is the inclusion of the first listed point that the specification does not imply that these light have to be provided.
response	Noted.

comment	*200* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.705 p. 56

comment	*64* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*201* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.706 p. 56-57

comment	*65* comment by: *Gatwick Airport* No Comment
response	Noted.

comment	*148* comment by: *John Hamshare* This amendment is welcomed, as is the inclusion of the first listed point that the specification does not imply that these light have to be provided.
response	Noted.

comment	*149* comment by: *Airport Zurich* In addition to the possibility to switch lights “on and off” it should also be possible for controller to control and adjust intensity of lights (*cf.* to CS ADR-DSN.T.921 (b)(2).
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment	*202* comment by: *Aerodrome safety regulation departement* **Comments :** There is a need to show the link between M.706 and T.921 in the applicability paragraph of CS M.706, because RWSL would be of no use without a detection system as described in CS T.921. To express this link, we suggest the following highlighted adding in § (a)(2) of the CS :

(a) Applicability:

(1) The inclusion of detailed specification for RWSL is not intended to imply that RWSL have to be provided at an aerodrome.

(2) RWSL is a type of autonomous runway incursion warning system as described in CS T.921, consisting of two basic visual components: runway entrance lights (RELs) and take-off hold lights (THLs).The two components can be installed individually, but are designed to complement each other.

response | Partially accepted. The proposed text is amended as follows: '(a)(2) RWSL is a type of autonomous runway incursion warning system (see CS ADR-DSN.T.921)...'.

comment | *267* | comment by: *Airbus*

New CS ADR-DSN.M.706 provides detailed specification for designing Runway Status Lights (RWSL) when implemented. In particular, CS ADRS-DSN.M.706 (c) (1) specifies the Runway Entrance Lights (RELs) as follows: *« Where provided,* ***RELs should consist of a single line of fixed in pavement lights showing red*** *in the direction of aircraft approaching the runway".*

AIRBUS is wondering if other designs, such as the use of red cross for RELs, might be assessed as acceptable alternate solutions and in such case, the opportunity to add provisions in GM1 ADR-DSN.M.706 for the acceptability of other design solutions.

RATIONALE / REASON for comment:

Taking into account the impacts on aircraft operations, AIRBUS would be interested by any further explanation on the way proposed RELs' design as well as related operational concept has been validated, in particular from a human factor standpoint.

response | Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes. Other design proposals can be assessed and approved by NAAs when compliance is demonstrated in the certification basis (CB).

CS ADR-DSN.M.710 p. 57

comment | *66* | comment by: *Gatwick Airport*

No comment

response	Noted.

comment	*203* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*238* comment by: *EPRZ* Letter (b1) of this CS indicates that taxiwaty centre line lights "... need not to be provided when the traffic density is light and taxiway edge lights, and centre line marking provide adequate guidance". Letter (b3) of CS ADR-DSN.M.715 indicates that on a taxiway curve the spacing of taxiwaty centre line lights where RVR < 350m and radius of TWY curve is <400m is 7,5m and it should extend for 60m before and after the curve EPRZ is a light traffic density airport, operating with the minimum RVR of 200m. TWY centre line lights are provided as per binding law provisions, except the increased density before and after the curve. Currently we could either disassemble the TWY centre line lights to comply with the law or install additional lamps as per DAAD (more expensive solution). Considering CS ADR-DSN.M.710 (b)(1) and the idea of introducing current NPA (amongst others - generating significant cost savigs) I would suggest to supplement CS ADR-DSN.M.715 (B)(3) table with an exeption for light traffic density airports
response	Not accepted. This NPA does not provide any proposal to amend paragraph CS ADR-DSN.M.715 (b)(3). Any new proposed amendments should be evaluated and consulted with the stakeholders before publication in the NPA. The commentator is invited to provide to EASA the proposed amendment to CS ADR-DSN.M.715 (b)(3) with the explanation and justification to be considered in one of the forthcoming NPAs.

CS ADR-DSN.M.720 p. 57-58

comment	*15* comment by: *Amsterdam Airport Schiphol - AMS/EHAM (and D.A.A)*

CS ADR-	The requirement mentioned in CS ADR-DSN.M.720 under point (c)(5) is

DSN.M.720 (c)(5)	ambiguous; it refers to runway lighting and taxiway lighting in general. The requirement should refer to runway edge lights and taxiway edge lights instead. **New text proposal**: "*Where a runway forming part of a standard taxi route is provided with runway lighting and taxiway <u>edge</u> lighting, the lighting system should be interlocked to preclude the possibility of simultaneous operation of both forms of lighting.*"

response Partially accepted. Paragraph CS ADR-DSN.M.720(a)(3) is not moved anymore to (c)(5) and it is also deleted from CS ADR-DSN.M.720(a)(3) as the same provision is already provided in CS ADR-DSN.S.885(c).

comment *67* comment by: *Gatwick Airport*

No comment

response Noted.

comment *204* comment by: *Aerodrome safety regulation departement*

Proposition accepted without comments

response Noted.

CS ADR-DSN.M.725 p. 58

comment *68* comment by: *Gatwick Airport*

No comment

response Noted.

comment *205* comment by: *Aerodrome safety regulation departement*

	Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.730 p. 59

comment	*69* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*206* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.735 p. 59

comment	*70* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*207* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.740 p. 59

comment	*71* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*208* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.745 p. 59

comment	*72* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*209* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.760 p. 60

comment	*73* comment by: *Gatwick Airport*

	No comment
response	Noted.

comment	*210* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.M.771 p. 60

comment	*74* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*211* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.N.775 p. 60-64

comment	*75* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*212* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*349* comment by: *Geneva Airport* Vacated indication and location on the same signs can't it be confusing for pilots and an over-information ?
response	Noted. The information sign should be considered as an example. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

CS ADR-DSN.N.780 p. 65-70

comment	*16* comment by: *Amsterdam Airport Schiphol - AMS/EHAM (and D.A.A)* CS ADR-DSN.M.780 (a)(6): In the new figure N-4, the combination of a runway designation sign and a location sign, as required in CS ADR-DSN.M.780 (a)(6) has been deleted. This combined sign however is the most commonly provided sign at runway entrances which underlines that conclusion of this type of sign in figure N-4 is useful.
response	Noted. Figure N-4 is providing the mandatory instruction signs only, while the combination of a mandatory and information signs is provided in Figure N-5.

comment	*76* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*213* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*338* comment by: *Fraport AG* N.780 (c) (5) vs. Figure N-5 Text in N.780 (c)(5) describes that a taxiway designator has to be provided on an runway holding position. In figure N-5 a taxiway designator is only shown at the CAT I runway holding position not at the CAT II or CAT III holding position. This is an inaccuracy which already exists in ICAO Annex 14 as well. *suggestion for N.780(c)(5)* The inscription on a runway-holding position sign at a runway-holding position ***for CAT I weather conditions*** should be consist of the taxiway designation and number. Otherwise figure N-5 has to be adapted.
response	Noted. This NPA is not proposing an amendment of paragraph (c)(5) which is existing text and identical to the relevant ICAO Annex 14, Volume I, Aerodromes. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

CS ADR-DSN.N.785 p. 71-73

comment	*77* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*214* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.N.795 p. 74

comment	*78* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*215* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.N.800 p. 74

comment	*79* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*216* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.Q.846 p. 74

comment	*80* comment by: *Gatwick Airport*

	No comment
response	Noted.

comment	*217* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.Q.852 p. 74-75

comment	*81* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*218* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.S.880 p. 75-76

comment	*82* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*219* comment by: *Aerodrome safety regulation departement* **Comments** : The addition of a runway guard lights switch-off time requirement (15s) in table S.1 is: - inconsistent with ICAO Annex 14 table 8-1 which does not mention such a requirement for the time being, - redondant because runway guard lights maximum switch-over time is already specified through requirements applicable to essential taxiways, The requirement of a secondary power supply is moreover mentioned in CS ADR-DSN.S.880 (d)(3) which refers to CS ADR-DSN M.745 runway guard lights. We therefore propose to withdraw the inclusion of a maximum switch-over time on runway guard lights in table S-1.
response	Not accepted. The proposal was discussed and it was agreed during the Visual Aids thematic meeting to add this requirement in table S-1 for safety benefits.

CS ADR-DSN.T.921 p. 76-77

comment	*9* comment by: *Flughafen Berlin Brandenburg GmbH* In conjunction with M.706 the components of an ARIWS are RELs and THLs. The current wording of T.921 does not exclude other visual aids (lights) to be components of an ARIWS. While this allows for different local solutions in the context of an ARIWS-implementation (e.g. use of stop bars), the level of standardisation across different airports might be significantly reduced. It is clearly beneficial to develop a standardised operating environment in terms if visual aids, given the fact that the information provided by an ARIWS (irrespective of the components employed) are safety critical/ relevant and have to be uniformly recognised by flight crews. Hence, other/potential types of an ARIWS that may be implemented should be clearly described in detail regarding their location and characteristics. Rationale: The underlying intention of all EASA certification activitites (and the CS) is the implementation / adoption of common safety rules / requirements. While - according to EASA's response to comment 301 within CRD 2016-04 - this is true for the dash-length of apron service road markings, this all the more true for an ARIWS.
response	Noted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment	*10* comment by: *Flughafen Berlin Brandenburg GmbH* Typo in section 4.
response	Accepted. Typo is corrected.

comment	*83* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*150* comment by: *John Hamshare* This amendment is welcomed, as is the inclusion of the first listed point that the specification does not imply that this system has to be provided.
response	Noted.

comment	*156* comment by: *Airport Zurich* (b)(1): Please add to the sentence under Paragraph (b)(1) following specification: "It should provide autonomous indication of potentially conflicting traffic or of the occupancy of an active runway and a direct warning to a flight crew or vehicle operator;"
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment	*157* comment by: *Airport Zurich* (b)(4) Letter “F” appears double in word "Ffailure" – please delete first letter 'F' resulting in “failure”. Paragraph (b) appears double – please change second (b) paragraph to '(c).
response	Accepted. Typo is corrected.

comment	*160* comment by: *ACI Europe* Typographical error (4) Ffailure - *should be* F~~f~~ailure of the ...
response	Accepted. Typo is corrected.

comment	*220* comment by: *Aerodrome safety regulation departement* CS ADR-DSN.T.921 (2)(b) should be renumbered (2)(c) and also inserted in AMC OPS.A.005.
response	Accepted. Typo is corrected. Noted. Paragraph (c) will be incorporated in future AMC amendments.

comment	*278* comment by: *René Meier, Europe Air Sports* CS ADR-DSN.T.921 ARIWS page 76/115 In our comment on the GM we ask for more precise design features to get real guidance for aerodrome planners, operators, and users. page 77/115 Please delete one of the "f" from the word "failure" in (4). And a question: Are there recent standards or recommended practices available for ARIWS development?
response	Noted. Accepted. Typo is corrected. Noted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment	*337* comment by: *Fraport AG* typing error at (b) (4) - Ffailure vs. **Failure**

	Nummeration error: last part is part **(c)**
response	Accepted. Typo is corrected.

comment	*344* comment by: *Swiss Aerodromes & GASCO (General Aviation Steering Committee Switzerland)* rf. CS ADR-DSN.T.921 Autonomous runway incursion warning system (ARIWS): We strongly support a strict implementation of the following clause with regards to ARIWS: *"The wording of the applicability clause (CS ADR-DSN.T.921(a)) ensures that the provisions should in no way be interpreted as an obligation or recommendation to install such a system."* - particularly with regards to regional aerodromes ARIWS must not become a mandatory system.
response	Not accepted. This is already clearly stated in CS ADR-DSN.T.921(a).

CS ADR-DSN.U.925 p. 77

comment	*84* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*131* comment by: *Airport Zurich* "*It would have been a good opportunity when defining the **chromaticities for solid state lights** to reduce the area for green lights, to reduce proximity to white. Additionally, it would have been good to reduce the area for red and avoid the shorter wavelengths since in the hyper red spectrum (>630 nm) ametropia is highly present*".
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

comment	*221* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*325* comment by: *Bavarian Aviation Authority* Es sollte im GM aufgenommen werden, dass es bei der Verwendung von blauen LED-Feuern für die Befeuerung von alternativen Rollwegmittellinien möglicherweise abweichende Anforderungen geben kann. Für die Markierung von alternativen Rollleitlinien hat sich die Farbe „Himmelblau“ (RAL 5015) bewährt. Es sollte im GM aufgenommen werden, dass es für die Markierung von alternativen Rollwegmittellinien in der Farbe blau möglicherweise abweichende Anforderungen geben kann.
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

CS ADR-DSN.U.930 p. 77-83

comment	*85* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*222* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

CS ADR-DSN.U.940 p. 84-87

comment	*86* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*223* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

3. Proposed amendments - Book 2 - GM p. 87

comment	*87* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*300* comment by: *Federal Office of Civil Aviation (FOCA), Switzerland* *Comment FOCA:* ICAO Doc 9157 Aerodrome Design Manual is sometimes mentioned as further guidance material however in this ICAO document, the ARC and in particular the code letter is not defined in the same way as in the present NPA. It could be confusing. Additional general text to inform the readers about this difference could be valuable.
response	Accepted: The text of GM1 ADR-DSN.A.005(f) is supplemented by a Note.

GM1 ADR-DSN.A.005 p. 87-88

comment	*88* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*161* comment by: *ACI Europe* GM1 ADR-DSN.A.005 Aerodrome ~~Rreference C~~code (ARC) This is probably a typographical error - Aerodrome Reference Code (ARC) - deletion of Rreference is a typographical error. However, it is suggested that the capitalisation of **A**erodrome **R**eference **C**ode should be maintained for clarity of the acronym and as the term itself can be considered the equivalent of a proper name in the industry, capitalisation would be justified.
response	Accepted. Typo is corrected. Noted. The text follows an EASA style guide.

comment	*226* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*264* comment by: *Airbus* Typo in the title: Replace GM1 ADR-DSN.A.005 Aerodrome ~~Rreference~~ ~~C~~code (ARC) by GM1 ADR-DSN.A.005 Aerodrome R~~r~~eference C~~c~~ode (ARC)
response	Accepted. Typo is corrected.

GM1 ADR-DSN.B.015 p. 88

comment	*89* comment by: *Gatwick Airport*

	No comment
response	Noted.

comment	*227* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.025 p. 88

comment	*90* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*228* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.030 p. 88-89

comment	*91* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*229* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.045 p. 89

comment	*92* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*127* comment by: *Bombardier* The Guidance Material states that the recommended runway widths were developed for "typical aeroplane characteristics". However, there is no provision made for aeroplanes with alternate configurations, such as the Bombardier DHC-8-400, in either the GM or the standard defined in the CS. Additionally, while we assume "typical aeroplane characteristics" applies to aircraft with main landing gear mounted on the fuselage or near the wing root, this is not explicitly stated in the GM Recommendation: the GM should reference a process for determining minimum runway width for aeroplanes with alternate configurations. A definition of "typical aeroplane characteristics" should also be given to determine when that process should be applied.
response	Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States and further explanation is given in relevant CS.

comment	*230* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments

response	Noted.

GM1 ADR-DSN.B.060 p. 89

comment	*93* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*231* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.080 p. 89

comment	*94* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*151* comment by: *John Hamshare* This amendment is welcomed as it clarifies the contribution of the transverse and longitudinal runway slopes to rapid drainage.
response	Noted.

comment	*232* comment by: *Aerodrome safety regulation departement*

	Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.095 p. 89-90

comment	*95* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*233* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.125 p. 90-91

comment	*96* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*152* comment by: *John Hamshare* This amendment regarding the 'consideration' of runway shoulders as mitigation for blast erosion due to strong winds causing significant deviation is welcomed.
response	Noted.

comment	*234* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.140 p. 91-92

comment	*97* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*235* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.145 p. 92-93

comment	*98* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*236* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*265* comment by: *Airbus* **Delete** GM1 ADR-DSN.B.145 (b) *"Shoulders for runways where the code letter is E ~~or F~~ normally should be paved"* **Justification:** Ensure consistency with CS ADR-DSN.B.135 *Width of runway shoulders*, CS ADR-DSN.B.145 *Surface of Runway shoulders* and ICAO State Letter AN 4/1.1.57-17/44, dated 19 April 2017. Runway shoulders for Code E aircraft have been assessed to be *"load bearing, RFF, jet blast resistant"* (refer to Attachment A Paragraph 1.1 to State Letter AN 4/1.1.57-17/44).
response	Not accepted. The remaining text of paragraph (b) in GM is additional guidance material to CS ADR-DSN.B145 and it is not considered to be inconsistent with the new paragraph (b) in CS.

comment	*266* comment by: *Airbus* Remove the following sentence in GM1 ADR-DSN.B.145 (c) *"If movements of 4-engined aircraft with a code letter D take place, the need for fully paved width shoulders should be assessed by local hazard analysis."* And, due to proposed deletion of (b) (see comment 265), rename GM1 ADR-DSN.B.145 (c) -> GM1 ADR-DSN.B.145 (b) Final GM1 ADR-DSN.B.145 (b) would be: *(b) Where the runway shoulder is not paved, it may be possible to contain the risk from erosion or from the ingestion of debris. In such cases:* *(1) The runway shoulder should be stabilised and the ground is prepared so that there is full* *grass coverage with no loose gravel or other material. This may include additional materials if the bearing strength and surface of the ground are not sufficient.* *(2) A programme of inspections of the shoulders and runway may be implemented to confirm their continuing serviceability, and ensure that there is no deterioration that could create a risk of foreign object debris (FOD), or otherwise hazard aircraft operations.* *(3) A programme of sweeping may be required before and after movements, should debris be drawn onto the runway surface.* **Justification:** Ensure consistency with CS ADR-DSN.B.135 *Width of runway shoulders*, CS ADR-DSN.B.145 *Surface of Runway shoulders* and ICAO State Letter AN 4/1.1.57-17/44, dated 19 April 2017. Runway shoulders for 4-engined Code D aircraft have been assessed to be *"load bearing, RFF, jet blast resistant"* (refer to Attachment A Paragraph 1.1 to State Letter AN 4/1.1.57-

	17/44).
response	Not accepted. The text of paragraph (c) in GM is existing requirement moved from GM1 ADR-DSN.B.125 and is additional guidance material to CS ADR-DSN.B145. The text of paragraph (c) in GM is not considered to be inconsistent with the text provided in CS.

GM1 ADR-DSN.B.150 p. 93

comment	*99* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*239* comment by: *Aerodrome safety regulation departement* In point (a), some guidance has been added about the frangibility of the objects on an object-free area : "Any equipment or installation, required for air navigation or for aircraft safety purposes, located in this object-free area, should be frangible and mounted as low as possible". This sentence follows some other guidance linked to the graded portion of the strip : " There are limitations on the slopes permissible on the graded portion of the strip". As a consequence, it could be understood that "the object-free area refers to the graded portion of the strip, being therefore inconsistent with T.915 (g). Actually, CS T.915 (g) says : "Any equipment or installation, required for air navigation or for aircraft safety purposes, which should be located on the non-graded portion of a runway strip, should be frangible and mounted as low as possible". Because of what is preceding, the last sentence of the GM may be confusing with the requirement of T.915 (g). => A suggestion would be to withdraw the sentence : " There are limitations on the slopes permissible on the graded portion of the strip" because, C. B.175 and B.180 are far more precise about slopes requirements on the strip. For point (b), we suggest the following alternative proposal focusing on the understanding of location of the threshold : "When the threshold is displaced, the strip should begin before the beginning of the runway at the distances specified in CS. B.155 at the widths specified by CS B.160." Added precisions about the end of the runway used for landing could be confusing and should be removed.

response	Noted. First two paragraphs: Paragraph (a) of GM1 ADR-DSN.B.150 refers to the text provided in ICAO Doc 9157, Aerodrome Design Manual Part 1, Runways. Paragraph 9.9: 'Siting of equipment and installations on operational areas' of ICAO Annex 14, Volume I, Aerodromes is under assessment and revision at ICAO. EASA follows the developments of ICAO and will propose an appropriate amendment of CS ADR-DSN.T.915 when commonly agreed at ICAO level. Accepted. Third paragraph: the proposed sentence: 'There are limitations on the slopes permissible on the graded portion of the strip' is deleted from paragraph (a) of GM1 ADR-DSN.B.150. Not accepted. Fourth paragraph: There are possibilities that the end of the landing distance does not coincide with the end of a runway. Proposed paragraph (b) refers to other regulatory material, which was discussed and agreed during the thematic meeting consultation with NAAs, aerodrome operators and stakeholders.

GM1 ADR-DSN.B.165 p. 93-94

comment	*100* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*240* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.B.175 p. 94-95

comment	*101* comment by: *Gatwick Airport* No comment

response	Noted.

comment	*241* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*336* comment by: *Fraport AG* B.175 (a) The GM text in the first sentence has been changed from issue 2 to issue 3 from "... may be considered." into "... should be considered.". Knowing that comments should only be given for the new or changing text within issue 4 it is not clear why the mentioned text change was done especially because the rest of the text still is written with "may". In general "may" is preferred.
response	Noted.

GM1 ADR-DSN.D.240 p. 95-98

comment	*102* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*153* comment by: *John Hamshare* It is not clear what appropriate measures are suggested by this guidance. Perhaps EASA could add some suggestions or examples of good practice already in use.
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment	*242* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*335* comment by: *Fraport AG* D.240 (h) (4) and (j) In several cases taxiway design in relation to the existing aprons will not allow a clear separation between rapid exit taxiways and non-rapid exit taxiways. Following the idea of part (j) a unpaved area should be in between two taxiways. Real live experiences shows that small unpaved areas between taxiways cannot probably be protected against blast erosion. So in cases where taxiways are close together, it might be an safety issue to have a paved area in between to protect this area against blast erosion and protect waiting aircrafts against being damaged by blast erosion. *suggestion for (h) (4)* A clear separation of pavement between a rapid exit taxiway and other non-rapid taxiways entering or crossing a runway should be provided if ***if the design criteria of the aerodrome and the intended aerodrome operation will not be influenced.*** *suggestion for (j)* Multi-taxiway entrances to a runway should be parallel to each other and should be distinctly separated by an unpaved area ***if the design criteria of the aerodrome and the intended aerodrome operation is not be influenced by blast erosion***. As alternative the word "should" could be replaced in both parts by "may" which gives a little bit more flexibility.
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

GM1 ADR-DSN.D.260 p. 98

comment	*103* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*158* comment by: *John Hamshare* Suggest that EASA add a note to help distinguish between an apron taxiway and a taxilane. Otherwise, it seems unnecessary to include this specific statement as an apron taxiway is simply a taxiway like any other. The term “apron taxiways” doesn’t appear in the D.260 table, is EASA referring to the “aircraft stand taxilane”? There are different figures for taxilanes in this document as there is in ICAO - so this statement in Guidance Material point “g” that says “are the same as for any other taxiway” is unclear, and doesn’t appear to align with ICAO.
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment	*243* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.D.320 p. 98-99

comment	*104* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*244* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*326* comment by: *Bavarian Aviation Authority*

	Was the adaptation of the requirement also assessed with regard to aircraft running off the runway or leaving the taxiway and their respective consequences?
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

GM1 ADR-DSN.D.325 p. 99

comment	*105* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*245* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.D.330 p. 99

comment	*106* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*246* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*276* comment by: *Aena Aeropuertos, S.A.* Due to a mistake the article refers to the runway stripe.
response	Accepted. Typo is corrected. GM1 ADR-DSN.B.185, paragraphs (a) and (b) are added in Book 2, providing guidance material for open-air storm water conveyance located in the non-graded portion of a runway strip.

comment	*327* comment by: *Bavarian Aviation Authority* Was the adaptation of the requirement also assessed with regard to aircraft running off the runway or leaving the taxiway and their respective consequences?
response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

GM1 ADR-DSN.E.365 p. 99-100

comment	*107* comment by: *Gatwick Airport* We feel the reduction in the distance between smaller aircraft should take into consideration that due to the lower height of the wing tips it would increase the risk of contact with vehicle/equipment and aircraft during the turnround.
response	Noted. The proposed reduction is applied for higher code letters D, E or F when entering or exiting the stand equipped with a visual guidance docking system. The same applies for code letter C if a safety assessment indicates that such reduction would not affect the safety of operations of aircraft.

comment	*167* comment by: *daa - Dublin & Cork airports* daa would request that this increased clarity with regard to the guidance material and the potential for reduction of clearance distances to all parts of the aircraft where a visual docking guidance system is utilised is also transferred at the higher level into part (c)(3)(i&ii) of the CS for E.365. There is still potential for confusion in noting where reduced clearances may apply.

	Suggest altering the text for part (c)(3)(ii) to state: *"over a portion of the stand provided with azimuth guidance by a visual docking guidance system the minimum clearance of 4.5ms may be applied between an aircraft entering or exiting the stand and any adjacent building, aircraft on another stand or other objects."*
response	Not accepted. Paragraph (b) already refers to an aircraft entering or exiting the stand and any adjacent building, aircraft on another stand and other objects. The text of paragraph (c) is in line with paragraph 3.13.6 of ICAO Annex 14, Volume I, Aerodromes. The text of paragraph (c)(3)(i) and (ii) of CS ADR-DSN.E.365 is not proposed to be amended in this NPA. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

comment	*247* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*328* comment by: *Bavarian Aviation Authority* Eine Reduktion der mindestens erforderlichen Sicherheitsabstände für Code C-Luftfahrzeuge auf 3m steht im Widerspruch zu CS ADR-DSN.E.365 (c). Eine Reduktion ist gemäß der Zulassungsspezifikation nur für Code D, E, und F Luftfahrzeuge möglich. Inwieweit bei einem auf 3m reduzierten Sicherheitsabstand das grundsätzliche Sicherheitsziel eines sicheren Abfertigungsbetriebs (s. CS ADR-DSN.E.345) gewährleistet werden kann, ist zu hinterfragen. Aus diesen Gründen sollte die geplante Ergänzung GM1 ADR-DSN.E.365 (b) (5) gestrichen werden.
response	Not accepted. The proposed amendment is provided in the guidance material and may be applied only for code letter C when entering or exiting the stand equipped with a visual guidance docking system and if a safety assessment indicates that such reduction would not affect the safety of operations of aircraft. The proposed amendment was also discussed and agreed during the thematic meeting of NAA and industry experts.

comment	*348* comment by: *Geneva Airport* 4,5 meters / 3 meters clearance are really short clearances espacially when fuelling with tank and de-icing are done on the stand.
response	Noted. The proposed reduction is guidance material and applied for higher code letters D, E or F when entering or exiting the stand equipped with a visual guidance docking system.

	The same applied for code letter C if a safety assessment indicates that such reduction would not affect the safety of operations of aircraft. The proposed amendment was discussed and agreed during the thematic meeting of NAA and industry experts.

GM1 ADR-DSN.L.540 p. 100

comment	*108* comment by: *Gatwick Airport* Agree
response	Noted.

comment	*248* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.L.560 p. 100-101

comment	*109* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*249* comment by: *Aerodrome safety regulation departement* We suggest the following alternative proposal of writing which sounds less confusing : a) ... (2) the runway side stripe marking stops at the point where the extended line of the taxiway edge ~~crosses~~meets the runway edge (see Figure GM-L-2(B)); ....

	(4) ~~the taxiway centerline marking overlays and therefore interrupts a continuous runway side stripe marking~~ the runway side stripe marking is continuous and therefore crosses the taxiway centre line marking (see figure GM-L-2(D)).
response	Not accepted. In figure GM-L-2(D) the taxiway centreline marking is continuous and interrupts the runway side stripe marking.

comment	*329* comment by: *Bavarian Aviation Authority* Figure GM-L-2 was allocated twice, GM-L-1 doesn't exist
response	Not accepted. Figure GM-L-2 is correctly allocated in GM1 ADR-DSN.L.560. Figure GM-L-1 exists in GM1 ADR-DSN.L.550 which was not amended by this NPA.

GM1 ADR-DSN.L.565 p. 101

comment	*110* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*250* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*299* comment by: *Federal Office of Civil Aviation (FOCA), Switzerland* *Comment FOCA to GM1 ADR-DSN.L.565:* The design of the turn pad marking depends on the clearance distance between the wheel of the landing gear and the edge of the turn pad and is therefore no longer related to the code letter, but to the OMGWS component. References of clearance distances should be provided in accordance with the OMGWS, in the same way as in CS ADR-DSN.B.095 Runway turn pads (c).

response	Accepted. In paragraph (b)(6) of CS ADR-DSN.L.565 the tabulation is replaced by reference to CS ADR-DSN.B.095(c).

GM1 ADR-DSN.L.605 p. 101-102

comment	*111* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*251* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

comment	*330* comment by: *Bavarian Aviation Authority* Figure GM-L-2 was allocated twice, GM-L-1 doesn't exist
response	Accepted. Typo is corrected. In GM1 ADR-DSN.L.605, Figure GM-L-2 is changed to Figure GM-L-3. Reference in GM1 ADR-DSN.L.605 (b) is amended accordingly.

GM1 ADR-DSN.M.625 p. 102

comment	*112* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*252* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.M.630 p. 103

comment	*113* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*253* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.M.655 p. 103

comment	*114* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*254* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.M.670 p. 103

comment	*115* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*255* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.M.690 p. 103-104

comment	*116* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*256* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.M.700 p. 104-105

comment	*11* comment by: *Flughafen Berlin Brandenburg GmbH*

	Why is figure GM-M-3 kept in GM when the entire sections c) and d) will be transferred to Book1?
response	Noted. Considering that the proposed amendment is accepted without disagreement, the transposition of the Figure GM-M-3 into CS (Book 1) will be considered in one of the forthcoming NPAs with the appropriate renumbering of all affected figures.

comment	*117* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*257* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.M.706 p. 106

comment	*118* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*154* comment by: *Airport Zurich* Paragraph (b) "Additional take-off and hold lights (THLs).., please correct the sentence by deleting “and" in between. Correct sentence should be written without “and” - Additional take-off hold lights (THLs)…"
response	Accepted. Typo is corrected.

comment	*258* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.M.750 p. 106

comment	*119* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*259* comment by: *Aerodrome safety regulation departement* Please find hereunder the additional guidance lines sent by French CAA on last january when answering pending actions : The lighting system of a de-icing/anti-icing facility should provide the appropriate quantity of light to perform treatment and postcheks of aircraft surfaces. Some values of minimum illuminance are provided in Table 3 of IES RP -37-15 an american document published by the Illuminating Engineering Society about Outdoor lighting for Airport environments (see annex). When a de-icing/anti-icing facility is located in close proximity to the runway, installation and use of floodlighting might result in a substancial glare either on approaching or on taxiing aircrafts. It could also hamper the controllers in ATC Tower. Where permanent nighttime lighting systems are installed, designers should ensure that lighting systems are equipped with proper cutoff to reduce glare or obtrusive light that affect pilots and controllers and if not possible, mobile systems could be used in respect of the same objective.
response	Noted. In this NPA, GM1 ADR-DSN.M.750 is amended only with Note 3 of paragraph 5.3.24.1 of ICAO Annex 14, Volume I, Aerodromes. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

GM1 ADR-DSN.P.825 p. 107

comment	*120* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*260* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

GM1 ADR-DSN.P.921 p. 107-110

comment	*4* comment by: *Flughafen Berlin Brandenburg GmbH* It may be beneficial to include the characateristics, locations, and signals of an ARIWS in the training syllabus of flight crews and - to a lesser extent - ATCOs. E.g. NPA 2016-14, page 125 or AMC1 ATCO.D:010 (a)(1) / Topic AGA 2 - Movement Area.
response	Noted. This NPA is proposing amendments to the aerodromes rules only. The competent department within EASA will be informed about the provided proposal.

comment	*121* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*155* comment by: *Airport Zurich* Paragraph (a) – (c): It is not quite clear, whether you mean one system or more systems. If you mean more systems, please specify which systems you are referring to. Paragraph (e)(3): a second (redundant) power supply would support the continuous availability resulting in a better acceptance of the system.

Paragraph (g)(1): last sentence under this Paragraph: "…not every installation requires a comprehensive ground surveillance system to feed…") is not appropriate, because exactly a comprehensive ground surveillance will lead to a lower error rate of the system.

Paragraph (g)(2)(i): Please specify whether you refer to a complete new and separate energy power supply or just a separate connection between the system and transformer station.

response

Partially accepted. First paragraph: paragraph is amended; ARIWS abbreviation is amended with 'autonomous systems' in order to refer to different systems in general. The wording 'system(s)' is used also in ICAO Annex 14, Volume I, Aerodromes and remains in paragraphs (a) to (c) in order to indicate the guidance refer to different autonomous systems.

Not accepted. Second paragraph: The proposal is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

Not accepted. Third paragraph: The proposal is provided in guidance material and is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

Noted. Fourth paragraph: The proposal is provided in guidance material and is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes.

comment

162 comment by: *ACI Europe*

Typing error:

(g) Aerodromes:

(1) ..... on traffic levels, aerodrome geometry, ground taxi patterns, etc. Local user groups ...

While frequently applied in this manner, from a grammatical point of view there should be no comma before etc. The corrected sentence should read:

(1) ..... on traffic levels, aerodrome geometry, ground taxi patterns~~,~~ etc. Local user groups ...

response

Not accepted. The text follows the Oxford dictionary which indicates that both options can be used.

comment

261 comment by: *Aerodrome safety regulation departement*

Proposition accepted without comments

response | Noted.

comment | *269* comment by: *Copenhagen Airports Ltd*

GM1 ADR-DSN.T.921

The requirements below make ARIWS technology very expensive to implement. Current A-SMGCS technology can fairly easy add the ARIWS function

(software and AGL only), hence the requirements on independent control and power supply systems are overkill – ARIWS is complementary/safety

net to normal ATS functions only.

(d) An ARIWS may share common sensory components of a surface movement guidance and control system (SMGCS) or advanced surface movement guidance and control

system (A-SMGCS), however, it operates independently of either system.

g(2) Although there may be local specific requirements, some basic system requirements are applicable to all ARIWS: (i) the control system and energy power supply of the

system should be independent from any other system in use at the aerodrome, especially the other parts of the lighting system;

response | Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes. See CS ADR-DSN.T.921 (a) Applicability: The inclusion of detailed specifications for an ARIWS is not intended to imply that an ARIWS has to be provided at an aerodrome.

comment | *277* comment by: *René Meier, Europe Air Sports*

GM1 ADR-DSN.T.921 ARIWS
pages 107-110/115

We propose to add a few design features to this GM in order to make clear that

for aerodromes of simple RWY/TWY/apron layout,

where the runways are not instrument runways,

where no obstacles hinder TWR staff to have a clear picture of all movements at any time,

where the number of movements is below 50'000 p.a.,

no ARIWS needs to be installed.

response	Not accepted. The proposed amendment is identical with the relevant text in ICAO Annex 14, Volume I, Aerodromes. See CS ADR-DSN.T.921 (a) Applicability: The inclusion of detailed specifications for an ARIWS is not intended to imply that an ARIWS has to be provided at an aerodrome.

comment	*332* comment by: *Irish Aviation Authority* A diagram would be considered beneficial to supplement the text contained under GM1 ADR-dsn.T.921 to fully illustrate the lighting system proposed.
response	Not accepted. The proposed amendment is identical with the relevant section in ICAO Annex 14, Volume I, Aerodromes.

comment	*345* comment by: *Swiss Aerodromes & GASCO (General Aviation Steering Committee Switzerland)* ref. GM1 ADR-DSN.T.921 Autonomous runway incursion warning system (ARIWS) para (g) (1): We strongly support the following flexible provision on the application of ARIWS: "An ARIWS does not have to be provided at all aerodromes. An aerodrome considering the installation of such a system may wish to assess its needs individually, depending on traffic levels, aerodrome geometry, ground taxi patterns, etc. Local user groups such as the local runway safety team (LRST) may be of assistance in this process. Also, not every runway or taxiway needs to be equipped with the lighting array(s), and not every installation requires a comprehensive ground surveillance system to feed information to the conflict detection computer."
response	Noted.

GM1 ADR-DSN.U.930 p. 110-111

comment	*122* comment by: *Gatwick Airport* No comment
response	Noted.

comment	*262* comment by: *Aerodrome safety regulation departement* Proposition accepted without comments
response	Noted.

4. Impact assessment (IA) p. 112

comment	*1* comment by: *Belgocontrol* EASA CS ADR-DSN.T.915 (g) Any equipment or installation required for air navigation or for aircraft safety purposes which should be located on the non-graded portion of a runway strip should be regarded as an obstacle and should be frangible and mounted as low as possible. Should be changed in: EASA CS ADR-DSN.T.915 (g) Any equipment or installation which should be located on the non-graded portion of a runway strip should be required for air navigation or for aircraft safety purposes. Installations for air navigation require to have a glide path in the runway strip. Solutions to meet the current requirement (g) either by moving the complete glide path installations outside the runway strip or by moving just the non-frangible part of it (the shelter) may have an impact on the safety (long cables can lead to stability or signal deviation issues) or the availability of the gldie path system. Furthermore the cost implications of solutions to try to comply to this requirement (eg. the move of the GP outside the runway strip implicates that the critical and sensitive areas have to be shifted accordingly which can lead to deviations of service roads, taxiways, etc.) is not in proportion to the likelihood of an aircraft colliding with a glide path. The likelihood is to be considered extremely unlikely as there are almost no known incidents in the world of aircraft colliding with a glide path installation.
response	Noted. The proposal is not part of this NPA. The commentator is invited to provide to EASA a proposal for the amendment with the explanation and justification to be considered in one of the forthcoming NPAs.

comment	*123* comment by: *Gatwick Airport* No comment

response | Noted.

comment | *128* comment by: *Bombardier*

The Bombardier DHC-8-400 was designed to operate on 30m runways and 15m taxiways, and currently operates at many facilities designed to those standards. Operators have also been granted special approvals to operate the aircraft into airports with 18m runways. If the CS is implemented as written, the minimum runway width for the DHC-8-400 will be increased to 45m, and the minimum taxiway width will be increased to 23m. This will require operators of this aircraft to either:

- obtain special approval to operate at airports where they currently do not need such an approval
- stop operating at those airports

As the DHC-8-400 has a long history of safe operation on 30m and 18m runways, as well as 15 m taxiways, we do not think this arbitrary restriction to its operations is justified, and is contrary to the intent of the NPA.

response | Not accepted. The proposed amendments in this NPA are in line with ICAO developments (ICAO SL 17/44) which are based on the outcome of the work conducted by both the ICAO Aerodrome Reference Code Task Force (ARC TF) and EASA under the EASA initiative on accommodating large aircraft at existing aerodromes. Before this proposal was made, both expert groups, which are composed of members from NAAs and industry, analysed all available studies and material. All documents are archived at ICAO and accessible to the Member States.

The proposed amendments in this NPA regarding the runway and taxiway widths are identical to the current requirements. For OMGWS between 9 m and up to but not including 15 m (i.e. the case of Dash-8-400) the proposal for a runway width is 45 m and for a taxiway width is no less than 23 m. Bombardier's Airport Planning Manual for Dash 8 Series 400 indicates the width of the runway of 45 m and the width of the taxiway of 23 m. Aerodrome operator has the possibility to assess the performance credits of DHC-8-400 and to propose one of the flexibility provisions to operate the aeroplane at the aerodrome infrastructure where the airline operator is already providing safe operations with DHC-4-800.

comment | *347* comment by: *Swiss Aerodromes & GASCO (General Aviation Steering Committee Switzerland)*

Reference is made to the provisions of ICAO's Annex 14 Amendment 13-A and the

	alignment of CS-ADR-DSN with the latest ICAO SARPs.While this goal is not questioned, we are concerned about the application of the norms on a national level. As such, NAAs in many cases do not differentiate between a "shoud" and a "shall" norm (Standards vs. Recommendations). Meanwhile EASA makes extensive use of provisions using the word "may". In order not to dilute the meaning and the rationale of provisions, we suggest to either clarify "may"-provisions or to define these or to define the implications of a "may"-norm, as ICAO does in Annex 14 with separate definitions for the meaning of "Standard" (should) and Recommendation (shall).
response	Noted.

5. Proposed actions to support implementation p. 113

comment	*124* comment by: *Gatwick Airport* No comment
response	Noted.

6. References p. 114

comment	*17* comment by: *Amsterdam Airport Schiphol - AMS/EHAM (and D.A.A)* In light of the abundant and rapidly increasing amount of abbreviations used in CS-ADR-DSN; a list of abbreviations would be more than welcome.
response	Noted. A list of acronyms is provided in Issue 4 of CS-ADR.DSN.

comment	*125* comment by: *Gatwick Airport* No comment
response	Noted.

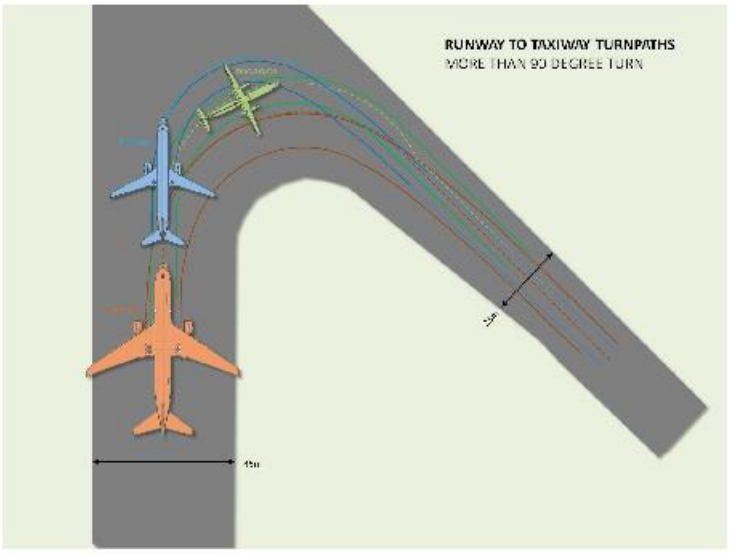
7. Appendix p. 115

comment	*126* comment by: *Gatwick Airport* N/A
response	Noted.

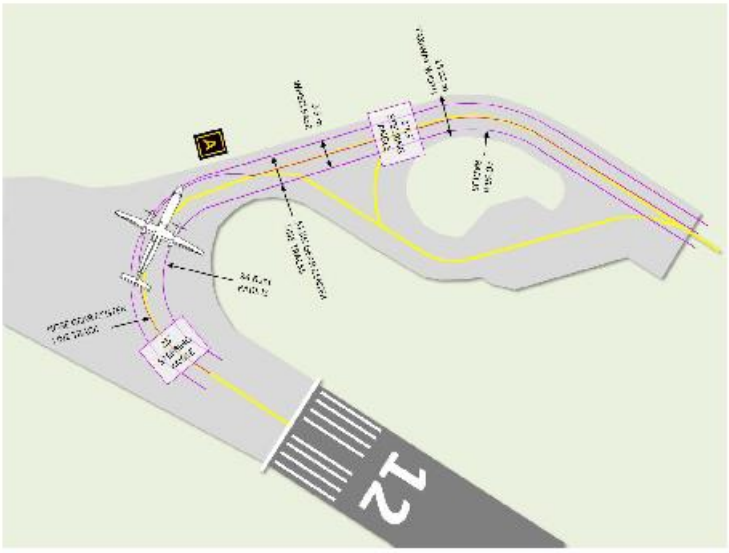
comment	*163* comment by: *ACI Europe* Add Glossary of Terms and Acronyms for claritiy and easy reference
response	Noted. A list of acronyms is provided in Issue 4 of CS-ADR.DSN.

Appendix A
Attachments

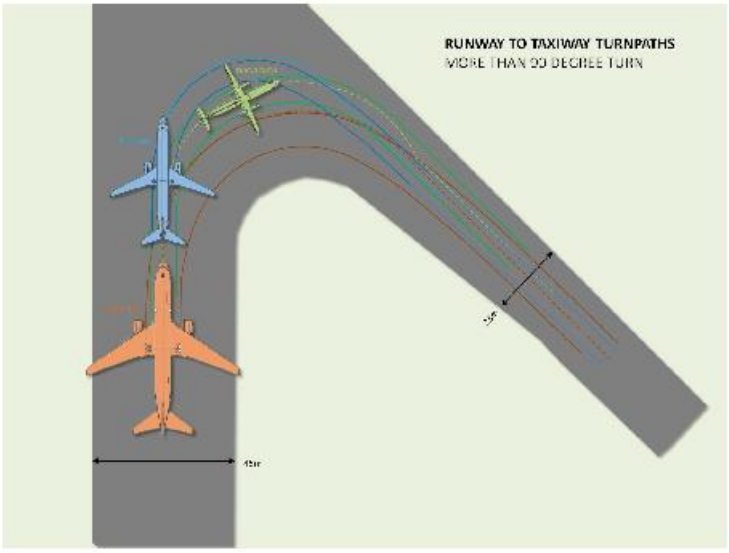
Wheel span and wheel base geometry.jpg
Attachment #1 to comment #39



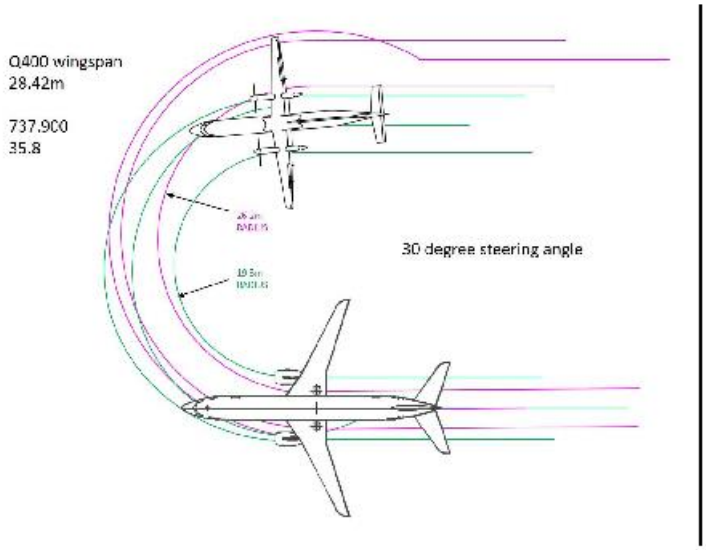
Q400 15m TWY.jpg
Attachment #2 to comment #39



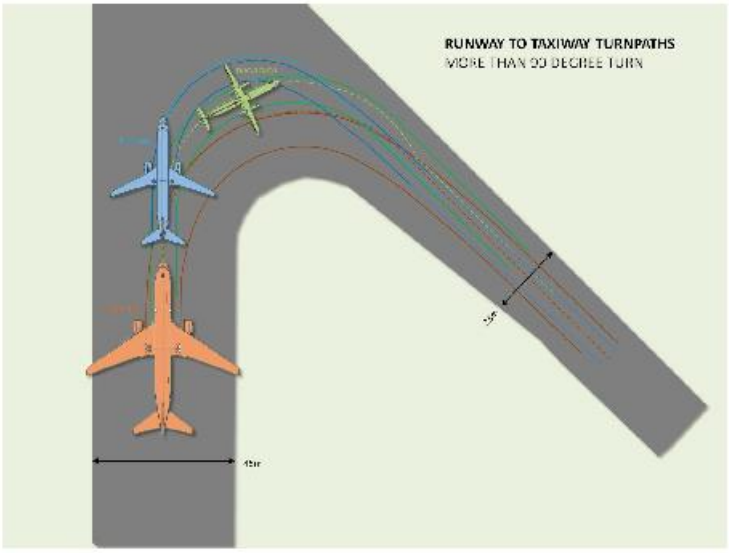
Q400 B737 B767 comparison.jpg
Attachment #3 to comment #39



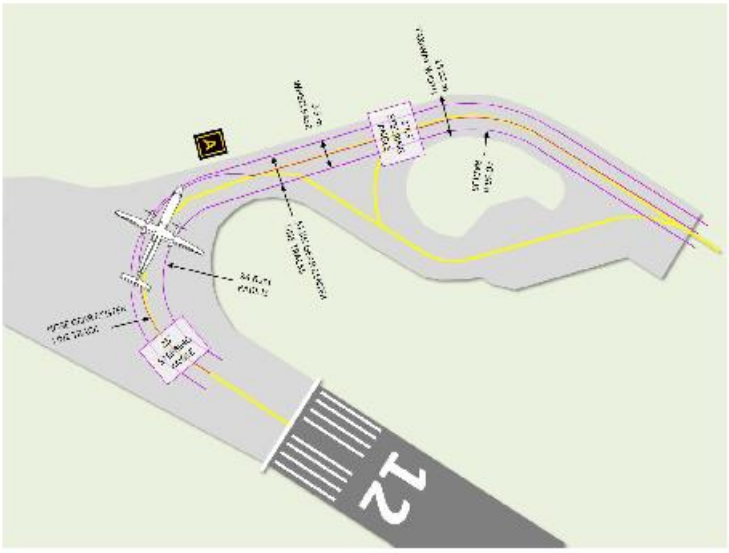
Q400 B737 detailed geometry comparison.jpg
Attachment #4 to comment #39



Q400 B737 B767 comparison.jpg
Attachment #5 to comment #38



Q400 15m TWY.jpg
Attachment #6 to comment #38



Wideroe_CMT_NPA 2017-04-MAY17.pdf
Attachment #7 to comment #43

WIDERØE COMMENT TO EASA NPA 2017-04

CS ADR-DSN.D.245 Width of taxiways

This CS stipulates that taxiway width for aircraft with OMGWS 9m up to but not including 15m shall be 23m.

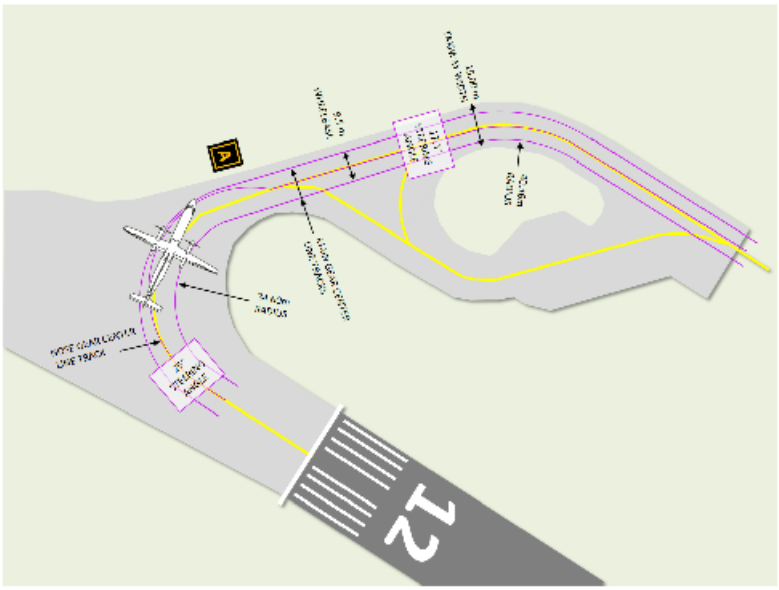
For the DHC-8-400 this is very restrictive. The DHC-8-400 OMGWS is 9.52m (while the distance between the main wheel axles is 8.8m). This means that minimum allowed taxiway width is 23m.

Widerøe has routinely operated the DHC-8-400 on 15m taxiways, which is unproblematic as shown on the below illustration.

The DHC-8-400 has a wheel base of 14.0m (nose gear to main gear distance), and therefore the main gear will stay well clear of taxiway edge.

It is illogical that the DHC-8-400 should have the stricter requirements for taxiway width than e.g. the Boeing 757-300 which - according to ICAO PANS Aerodromes Doc 9981,1st ed. 2015 - has a wheel span of 8.6m and a wheel base of 22.3m.

We would therefore suggest that the shorter wheel base for the DHC-8-400 could be credited to



allow operation on taxiway of 15m width.

Attached are sketches comparing the DHC-8-400 turns compared with larger aircraft.