



Network Manager
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FRA WORKSHOP

NM FRA System Evolutions

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Document Confidentiality Classification: Green



FRA Model evolutions

Earlier NM Release

FRA airspace definition through Airspace Type “Regulated Airspace (**RAS**)”

RAS Airspace can be build up:

- **ERAS** Elementary RAS
 - having its own polygon definition
- **CRAS** Composed RAS
 - Aggregation of multiple airspace volumes
 - Aggregation of multiple airspace types and/or vertical slices there off
 - AUA
 - AUAG
 - FIR
 - ES
 - ERAS

RAS is FRA when used in a FRA restriction used for FPL validation

FRA Model evolutions

Previous and planned for next NM Releases

FRA Point Usage

A usage can be defined for each point:

- Usage data model
 - AIXM 5.1 + ADR extension conform
 - Download from EAD SDO and upload in CACD
- **Point Usage**
 - A point's role can be:
 - EN - entry
 - EX - exit
 - I - intermediate
 - A - arrival
 - D – departure
 - Etc.. (In non-FRA context e.g EN/EX for OCA, Terminal, VFR,)

FRA Model evolutions

Previous and planned for next NM Releases

FRA Point Usage

- **Point Usage**
 - The (FRA) role is valid:
 - In a reference airspace
 - e.g. FRAxyz
 - Or related to a Reference border between 2 airspaces
 - FRAxyz/EPWW (CTA)
 - FRAxyz/airspace below FRAxyz
 - At a particular singleton or range of FLs
 - FL290
 - FL245/FL660 (FRA airspace vertical limits)
 - At particular time interval (e.g. during FRA activity)
 - During night (Night FRA)
 - H24
 - For a particular aerodrome (if role is A or D)
 - A for EBBR from FRAEDYY
 - Multiple roles

FRA Model evolutions

Previous and planned for next NM Releases

FRA Context

- To create the context **FRA Restrictions** will be generated from the point usages “I”
 - All the points with usage “I” in a particular RAS will be assembled in a FRA airspace restriction.
 - Only the significant points marked for usage “I” can serve as intermediate points in Limited FRA.
 - In full FRA all significant points marked as “I” and any coordinate can also serve as intermediate point in full FRA
- To complete the context **FRA Border Restrictions** will be generated from the point usages “EN” and “EX”
 - All the points with usage “IN” and “EX” for a particular RAS border will be assembled in a FRA border restriction.
 - E.g. Point1 and Point2 are EN for border AS1/AS2 between FL 245/660
 - E.g. Point1 and Point3 are EX for border AS2/AS1 between FL 245/660
 - E.g. Point4 is EX for border AS1/BelowAS1(Vertical exit) between FL 210/250
- FRA **validity** is reflected through the restrictions applicability

FRA Model evolutions

Previous and planned for next NM Releases

FRA Context

- To enhance the context **RAD Restrictions** will be generated from the point usages “A” and “D”
 - All the points with usage “A” and “D” for a particular RAS border and Aerodrome will be assembled in a RAD restrictions.
 - E.g. Point4 is EX for border AS1/BelowAS1(Vertical exit)
 - E.g. Point4 is also “A”, hence a mandatory point to exit FRA1 and land in AD1
- Remarks
 - E.g. Points with usage “A” must also have usage “EX” for the same context.
 - A point can be “I” at particular levels and serve as “EX” at other levels and serve as “A” for a particular destination
 - Usage validity shall be aligned to FRA operation times
 - Open borders between 2 adjacent FRA airspaces are possible

FRA Model evolutions

Planned Time Line

- Point Usage: OPS
- Generation of FRA Airspace Restrictions: OPT Spring 2018
- Generation of FRA Border Restrictions: OPT Autumn 2018
- Autumn 2018 to Spring 2019: Evaluation
- FRA restrictions: OPS Spring 2019
- Generation of RAD Restrictions related to FRA: OPT spring 2019

Thank You



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