

Skyguide FRA CH project

CFSPG Briefing November 2020

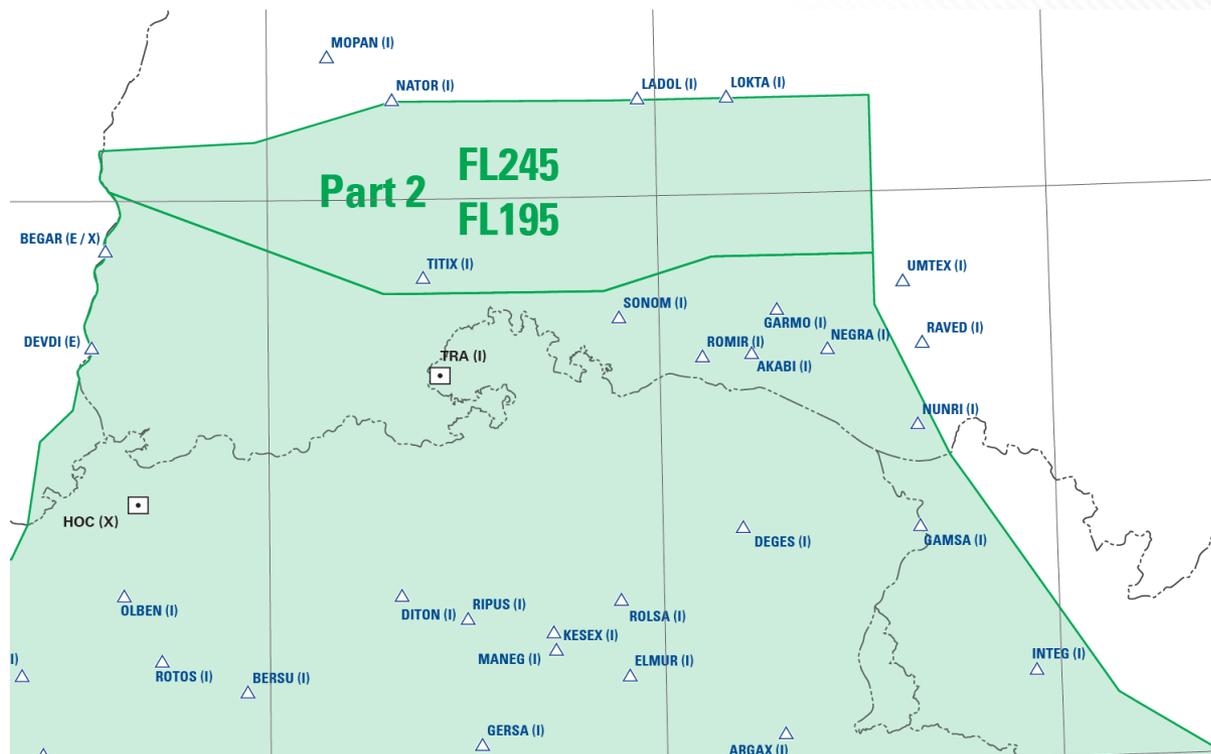
Important Project Updates

Timeline Changes

- FRACH is fully dependent on new technologies that will be delivered in the frame of skyguide's Virtual Center (VC) program.
- The exceptional situation caused by this year's COVID crisis has adversely affected the development and deployment of this work.
- Given this uncertainty and our internal safety requirement for a three month stabilization and familiarization period between the VC and FRA implementations, the FRACH implementation will be postponed until 2022.
- We are working on new planning but we expect that the project will be delayed by at least four months.
- Important points:
 - we do not plan to make any major changes to the design
 - we will continue testing and validating the FRA design with the NMOC (NM pre-vals scheduled for Feb, Apr and Jun)

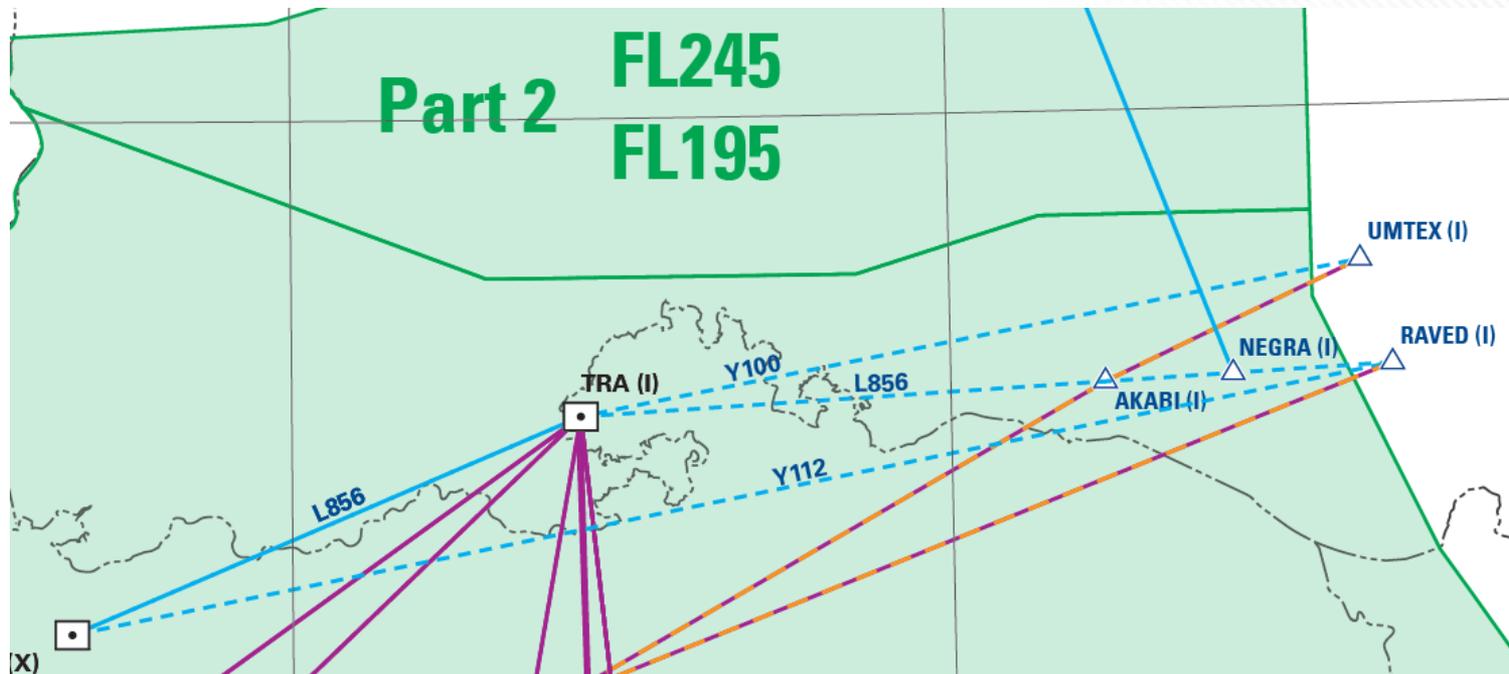
Design Changes – Solving Boundary Point Issues

- DFS and skyguide have signed an agreement on cross border FRA
- The first implementation step will offer limited cross border operations by using mandatory Intermediate waypoints mandatory located aside from ATC sector boundaries which have been selected in order to reduce the distance flown between the FRA areas.
- After this initial step, the agreement commits DFS and skyguide to further develop and implement cross-border Free Route Airspace operations with a view to continually improve network inefficiencies.



Design Changes – Solving FLOS Issues

- As the NM systems do not yet provide B2B FLOS data for waypoints, skyguide has decided to keep 3 ATS routes within the FRA to ensure that non-standard flight levels are correctly flight planned.



Design Status

Preliminary Tasks

- FUA
 - Full FBZ will be completed for Swiss and Cross border AMC manageable areas in 2021
 - Extension over Austria November 2020
 - CBA SWIT change Dec 2020
 - Extension over France expected 1st half 2021
- FLOS
 - The Swiss Regulator has decided that the change from E-W to N-S will only apply to upper airspace above FL195 (same as France)
 - Target implementation date is the AIRAC in April 2021
 - This should allow skyguide to remove the 'salami' RAD for summer 2021

GILIR	GVA	245	500	Yes	<p>Compulsory for traffic Via GILIR and [BALSI or KOGAS or MOBLO] Via LSAGUAC DEP (ad:LFJL/QE/QP/SG/SN/SO/ST/SI, EDTD/TF, EDFH) Except Type M</p> <hr/> <p>Only available for traffic- Via GILIR and [BALSI or KOGAS or MOBLO] Via LSAGUAC</p>	H24	LS5078
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FRA Connections

- Structurally limited design is complete
 - Connection spreadsheets developed during SESAR Project finalised.

	A	B
1		
2	FRA Switzerland Trajectories Geneva	
3		
4		
5	202001106	Version Release Date (YYYYMMDD)
6		
7		
8		<p>Each tab represents a FRA significant waypoint that can be used to enter the LSASFRA in the sectors controlled by Geneva.</p> <p>These waypoints can be FRA Entry (E) points or intermediate (I) points if coming from Zurich sectors.</p>
9		
10		<p>All structurally limited FRA connections to the FRA significant waypoint that can be used to exit the Geneva FRA sectors are detailed within the tab.</p> <p>These leaving waypoints can be FRA Exit (X) points or intermediate (I) points if going to Zurich or Karlsruhe/Munich sectors.</p>
11		
12		<p>Some FRA connections are only available at night. These are highlighted in GREEN in the availability and remarks columns in each tab.</p>
13		
14		

FRA Connections

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A	B	C	D	E	F	G	H	I	J	
1	GILIR (E)	RAD ID LSLF1133								
2										
3	Leaving point	FRA Connections	FL Restrictions	TRA affected	availability	Entry Parity	Exit Parity	Remarks	Current ATS Route	LSASFRA RAD
4										
5	BIBAN (X)	GILIR GVA BIBAN	305+	WEST	H24					LS2775
6	BIBAN (X)	GILIR GVA ORSUD BIBAN	305+	WEST	When WEST not avbl	ODD	ODD		UL612	LS2775
7	LURAG (X)	GILIR GVA MOBLO LURAG	195+	No	H24	ODD	ODD		UL612 / UM135	
8	NINTU (X)	GILIR NINTU	195+	No	H24	ODD	ODD		DCT	LS2775, LS2776
9	NINTU (X)	GILIR TUROM NINTU	195+	No	H24	ODD	ODD	Only available and mandatory for Dep Basel Group	UN852 / UN869	LS2769
10	NITAM (X)	GILIR GVA KOGAS MEDAM NITAM	195+	No	H24	ODD	ODD		DCT / DCT / UM730 / M730	LS2775, LS2772, LS2773
11	NITAM (X)	GILIR MILPA GIRKU KOGAS MEDAM NITAM	195+	No	H24	ODD	ODD	MIL /state	UN852 / DCT / UM730 / M730	LS2770, LSLF1134, LS2772, LS2773
12	NITAM (X)	GILIR TUROM MILPA KOGAS MEDAM NITAM	195+	No	H24	ODD	ODD	Only available and mandatory for Dep Basel Group	UN852 / DCT / DCT	LS2769, LS2770, LS2772, LS2773
13	NUSBA (X)	GILIR MILPA NUSBA	195+	No	H24	ODD	ODD			LS2770
14	PAFOC (X)	GILIR GVA PAFOC	195+	No	H24	ODD	ODD		DCT / DCT	LS2775
15	TEXXA (X)	GILIR TUROM MILPA TEXXA	195+	No	H24	ODD	ODD	Only available and mandatory for Dep Basel Group	UN852 / UN869	LS2769, LS2770
16	TEXXA (X)	GILIR MILPA TEXXA	195+	No	H24	ODD	ODD	MIL /state	UN852	LS2770
17	VEVAR (X)	GILIR GVA KOGAS VEVAR	355+	No	H24	ODD	ODD		DCT / DCT / DCT	LS2775, LS2772
18	VEVAR (X)	GILIR GVA KOGAS MEDAM VEVAR	195+	No	H24	ODD	ODD		DCT / DCT / UM730 / Y24	LS2775, LS2772, LS2773
19	VEVAR (X)	GILIR MILPA GIRKU KOGAS VEVAR	355+	No	H24	ODD	ODD	MIL /state	UN852 / DCT / DCT	LS2770, LSLF1134, LS2772
20	VEVAR (X)	GILIR MILPA GIRKU KOGAS MEDAM VEVAR	195+	No	H24	ODD	ODD	MIL /state	UN852 / DCT / DCT	LS2770, LSLF1134, LS2772, LS2773
21	VEVAR (X)	GILIR TUROM MILPA KOGAS VEVAR	355+	No	H24	ODD	ODD	Only available and mandatory for Dep Basel Group	UN852 / DCT / DCT	LS2769, LS2770, LS2770
22	VEVAR (X)	GILIR TUROM MILPA KOGAS MEDAM VEVAR	195+	No	H24	ODD	ODD	Only available and mandatory for Dep Basel Group	UN852 / DCT / DCT	LS2769, LS2770, LS2770, LS2773
23										
24										

FRA AIP

- All AIP route changes (Switzerland, France, Germany, Austria and Italy) identified
 - 3 new waypoints created
 - FRA waypoints and their FRA significance determined
 - Upper routes deleted
 - Lower routes modified to replace DCTs and overlap into the FRA area for the management of vertical connectivity to aerodromes below the FRA

Total route changes

AIP Swiss	70
AIP France	69
AIP Germany	9
AIP Italy	7
AIP Austria	2

FRA RAD

- All required RAD changes identified (except cross border elements with DFS)
 - 5 DMRs have been created in N-Connect (called LS_FRA)
 - 1 for the new APP 4-2 and PAN-EUROPE RAD elements to manage the structurally limited FRA connections and route connections to the underlying airports 1
 - 1 for changes to existing APP 3 restrictions
 - 1 for changes to existing APP 4-1 restrictions
 - 1 for changes to existing APP 7 restrictions
 - 1 for changes to existing PAN-EUROPE restrictions

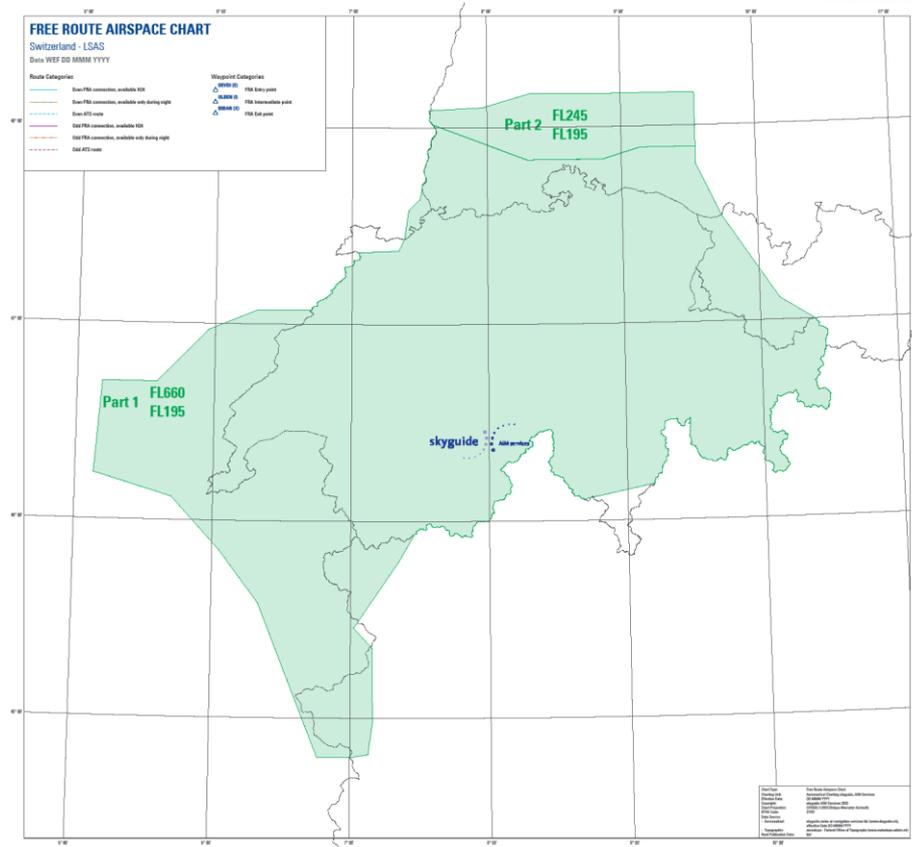
Total RAD changes	
PAN-EUROPE new	140
PAN-EUROPE existing	80 del & 113 amd
Appendix 3	35 amd
Appendix 4-1	105 del & 10 amd

- Overall, skyguide's FRA project will reduce the amount of RAD and it should be simpler than today.

FRA Validation

- Two pre-validation sessions using this data set have already been conducted with the NMOC
 - Solved some specific connections where day and night restrictions cancelled each other
 - Solved many instances where IFPS replaced FRA DCT segments with routes that lead to a reject
 - An issue with some connections to/from Italy leaving and re-entering the FRAs was identified. It will be solved with App 4 DCTs.
- We have previously questioned how to manage flight plan level changes and the corresponding sector counting when we reduce the number of waypoints and/or have no waypoints between entry and exit.
 - After discussions with the NM it was identified that the best option to keep the FRA network as simple as possible was to cancel existing RAD on exit points and add a PTR in NM systems instead.
 - During these sessions we tested several PTRs for long route segments and had correct vertical processing in NM systems.
 - This method will be applied to all segments where needed and the issue is resolved.
- Conclusion - FRA flight plan processing worked as expected and this gives us a good level of confidence in the RAD that we have developed to manage the structurally limited FRA design

FRA MAP



Next Steps

Next Steps

- FRA data
 - The connections spreadsheets, DMR extract spreadsheets, AIP changes and FRA MAP will be added to the skyguide website in the coming weeks
 - <https://www.skyguide.ch/en/company/about-us/airspace/>

skyguide

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About us

- Vision & Mission
- Airspace**
- Executive team & Board of directors
- Annual report 2019
- History

Environment

Safety

Customers & Partners

Innovation

Cooperation

Contact & Locations

Air traffic and airspace

Interactive map

Free Route Airspace

Information

Airspace

Skyguide is responsible for most Swiss airspace which corresponds to the national land and water borders. The area of responsibility also includes adjacent airspace in France, Germany, Italy and Austria.

Over 40% of all the flights we handle are in these adjacent airspace. In return, traffic in parts of southern Switzerland is assigned to Italy's air navigation service provider, and EuroAirport Basel-Mulhouse is handled by our French partner. These assignments have practical reasons. The constant rise of traffic volumes has resulted in a significant increase in international collaboration in air traffic management. The airspace we manage fully complies with the single European sky philosophy, and with the associated creation of so-called functional airspace blocks instead of national ones.

Next Steps

- More NMOC pre-validation
 - 23-24 February - including military areas active
 - 21-22 April - including other ANSPs
 - 14-15 June – including CFSPs



Thank You

