

LETTER OF AGREEMENT

between

VATSIM Germany
Bremen FIR

and

VATSIM Scandinavia
Copenhagen FIR

Effective: 2011-10-15

1 General.

1.1 Purpose.

The purpose of this Letter of Agreement is to define the coordination procedures to be applied between Bremen FIR and Copenhagen FIR when providing ATS to air traffic (IFR/VFR) on the VATSIM network.

All information and procedures described in this Letter of Agreement must not be used for real world purposes .

1.2 Operational Status.

All operational significant information and procedures contained in this Letter of Agreement shall be distributed to all concerned controllers by appropriate means. This Letter of Agreement itself constitutes public information.

1.3 Validity.

This Letter of Agreement becomes effective TBD and supersedes the Letter of Agreement between Bremen FIR and Copenhagen FIR dated 2007-04-12.

Sven Kratochvil
Bremen FIR, RG Director Bremen
VATSIM Germany

Lars Toftlund
Copenhagen FIR
VATSIM Scandinavia

Nils Friedrich
Bremen FIR, RG Director Berlin
VATSIM Germany

2 Areas of Responsibility & Sectorization

2.1 Areas of Responsibility.

The lateral and vertical limits of the respective areas of responsibility are as follows:

2.1.1 Bremen FIR.

Lateral limits: Bremen FIR as described in AIP Germany
Vertical limits: GND – FL660

2.1.2 Copenhagen FIR.

Lateral limits: Copenhagen FIR as described in AIP Denmark
Vertical limits: GND – FL660

2.2 Sectorization.

2.2.1 Bremen FIR.

2.2.1.1 Sector Hohn (HOHN).

Lateral limits: see Appendix A
Vertical limits: GND – 4500 feet MSL
Responsible ATS unit (in order of precedence):
1. ETNH_APP (Hohn Radar), 123.30
2. EDWW_E_CTR (Bremen Radar), 120.22
3. EDWW_A_CTR (Bremen Radar), 123.22
4. EDWW_CTR (Bremen Radar), 125.02

2.2.1.2 Sector Hamburg East (HAME).

Lateral limits: see Appendix A
Vertical limits: GND – FL105
Responsible ATS unit (in order of precedence):
1. EDDH_E_APP (Bremen Radar), 127.67
2. EDDH_W_APP (Bremen Radar), 134.25
3. EDWW_A_CTR (Bremen Radar), 123.92
4. EDWW_CTR (Bremen Radar), 125.02

2.2.1.3 Sector Eider (EID).

Lateral limits: see Appendix A
Vertical limits: GND – FL245
Responsible ATS unit (in order of precedence):
1. EDWW_E_CTR (Bremen Radar), 120.22
2. EDWW_A_CTR (Bremen Radar), 123.92
3. EDWW_CTR (Bremen Radar), 125.02

2.2.1.4 Sector Aller East High (ALEH).

Lateral limits: TBD, see Appendix A
Vertical limits: GND – FL245
Responsible ATS unit (in order of precedence):
1. EDWW_A_CTR (Bremen Radar), 123.92
2. EDWW_CTR (Bremen Radar), 125.02

2.2.1.5 Sector Müritz (MRZ).

Lateral limits: see Appendix A

Vertical limits: GND – FL285

Responsible ATS unit (in order of precedence):

1. EDWW_M_CTR (Bremen Radar), 124.17
2. EDWW_B_CTR (Bremen Radar), 123.22
3. EDWW_CTR (Bremen Radar), 125.02
4. EURM_CTR (Maastricht Radar), 135.45 (FL245+ only)

Remark: EURM_CTR is an ATS unit of EuroCenter vACC.

2.2.1.6 Sector Holstein (HOL).

Lateral limits: see Appendix A

Vertical limits: FL245 – FL660

Responsible ATS unit (in order of precedence):

1. EDYY_C_CTR (Maastricht Radar), 133.95
2. EDWW_A_CTR (Bremen Radar), 123.92
3. EDWW_CTR (Bremen Radar), 125.02
4. EURM_CTR (Maastricht Radar), 135.45

Remark: EURM_CTR is an ATS unit of EuroCenter vACC.

2.2.1.7 Sector Jever (JEV).

Lateral limits: see Appendix A

Vertical limits: FL245 – FL660

Responsible ATS unit (in order of precedence):

1. EDYY_J_CTR (Maastricht Radar), 134.70
2. EDYY_C_CTR (Maastricht Radar), 133.95
3. EDWW_A_CTR (Bremen Radar), 123.92
4. EDWW_CTR (Bremen Radar), 125.02
5. EURM_CTR (Maastricht Radar), 135.45

Remark: EURM_CTR is an ATS unit of EuroCenter vACC.

2.2.1.7 Sector Ostsee (OSE).

Lateral limits: see Appendix A

Vertical limits: FL285 – FL660

Responsible ATS unit (in order of precedence):

1. EDUU_E_CTR (Rhein Radar), 128.07
2. EDWW_M_CTR (Bremen Radar), 124.17
3. EDWW_B_CTR (Bremen Radar), 123.22
4. EDWW_CTR (Bremen Radar), 125.02
5. EURM_CTR (Maastricht Radar), 135.45

Remark: EURM_CTR is an ATS unit of EuroCenter vACC.

2.2.2 Copenhagen FIR

2.2.2.1 Sector Skrydstrup.

Lateral limits: see Appendix A

Vertical limits: 3500 MSL - FL65

Responsible ATS unit (in order of precedence):

1. EKSP_APP (Skrydstrup Approach), 127.42
2. EKDK_C_CTR (Copenhagen Control), 128.15
3. EKDK_CTR / EKDK_A_CTR (Copenhagen Control), 135.27

2.2.2.2 Sector A.

Lateral limits: see Appendix A

Vertical limits: 3500 MSL – FL660

Responsible ATS unit (in order of precedence):

1. EKDK_CTR / EKDK_A_CTR (Copenhagen Control), 135.27
2. EURN_FSS (Eurocontrol North), 133.45 (FL245+ only)

Remark: EURN_FSS is an ATS unit of EuroCenter vACC.

2.2.2.3 Sector C.

Lateral limits: see Appendix A

Vertical limits: 3500 MSL – FL660

Responsible ATS unit (in order of precedence):

1. EKDK_C_CTR (Copenhagen Control), 128.15
2. EKDK_CTR / EKDK_A_CTR (Copenhagen Control), 135.27
3. EURN_FSS (Eurocontrol North), 133.45 (FL245+ only)

Remark: EURN_FSS is an ATS unit of EuroCenter vACC.

2.2.2.3 Sector N.

Lateral limits: see Appendix A

Vertical limits: 3500 MSL – FL660

Responsible ATS unit (in order of precedence):

1. EKDK_N_CTR (Copenhagen Control), 134.67
2. EKDK_CTR / EKDK_A_CTR (Copenhagen Control), 135.27
3. EURN_FSS (Eurocontrol North), 133.45 (FL245+ only)

Remark: EURN_FSS is an ATS unit of EuroCenter vACC.

2.3 **Delegation of the Responsibility for the Provision of ATS.**

2.3.1 General

- 2.3.1.1 Between position 550409N 0082331E and position 544554N 0100313E the FIR boundary are - with regard to provision of Air Traffic Services - generally replaced by a boundary line of responsibility specified by following positions - see also Appendix B:

550409N 0082331E - 550417N 0082655E - 545500N 0084000E - 545400N 0090110E -
545220N 0091320E - 545015N 0091700E - 545100N 0093100E - 544924N 0094420E -
545028N 0095336E - 544554N 0100313E

2.3.2 Delegation of ATS from Bremen FIR to Copenhagen FIR

2.3.2.1 Schwerin North Area – see Appendix B

Within the Bremen FIR the responsibility for the provision of ATS in accordance with ICAO airspace classification has been delegated from Bremen FIR to Copenhagen FIR within the Schwerin North Area:

Lateral limits: 542700N 0120000E - 541500N 0115334E - 541744N 0113818E -
542700N 0120000E.

Vertical limits: FL105 – FL660

Airspace classification: C

2.3.2.2 Michaelsdorf Area – see Appendix B

Within the Bremen FIR the responsibility for the provision of ATS in accordance with ICAO airspace classification has been delegated from Bremen FIR to Copenhagen FIR within the Michaelsdorf Area:

Lateral limits: 542700N 012000E – 541744N 0113818E - 543400N 0105900E –
543920N 0104000E – along FIR boundary - 542700N 012000E

Vertical limits: GND – FL660

Airspace classification: FL100 – FL660 C
2500 ft GND – FL100 E
GND – 2500 ft GND G

The following applies for this area:

- IFR flights are not allowed in airspace classification G.
- At night, separation shall be provided between VFR flights and IFR flights in airspace classification E.
- Bremen FIR remains responsible for provision of ATS to uncontrolled VFR flights within Bremen FIR in airspace classification E and G.

2.3.2.3 Alsie Area – see Appendix B

Within the Bremen FIR the responsibility for the provision of ATS in accordance with ICAO airspace classification has been delegated from Bremen FIR to Copenhagen FIR within the Alsie Area:

Lateral limits: 545028N 0095336E - 544554N 0100313E – along FIR boundary -
543930N 0103000E - 543800N 0084500E - 544200N 0084000E -
545500N 0084000E - 545400N 0090110E - 545220N 0091320E -
545015N 0091700E - 545100N 0093100E - 544924N 0094420E -
545028N 0095336E.

Vertical limits: FL245 – FL660

Airspace classification: C

2.3.3 Delegation of ATS from Copenhagen FIR to Bremen FIR

2.3.3.1 In case of landing direction 14 at Sylt (EDXW), landing aircrafts will enter the Copenhagen FIR during their turn onto final. Both parties agree that Bremen FIR remains responsible for the provision of ATS for these aircrafts. Bremen ensures

- that aircrafts follows the published NDB/DME approach runway 14.
- that aircrafts remains between 1000 feet MSL and 3500 feet MSL (Airspace E) while within the area of responsibility of Copenhagen.
- proper separation between multiple aircrafts on the published NDB/DME approach runway 14.

Copenhagen ensures separation with other aircrafts within its area of responsibility.

Note: According to Danish regulations, there is no requirement for separation between VFR flights at night and IFR flights.

2.4 **Other Common Areas of Interest.**

2.4.1 Delegation of ATS from Malmö FIR to Copenhagen FIR

2.4.1.1 Area H2

Lateral limits: 553356N 0124651E – 552201N 0130137E – 551458N 0125956E –
545500N 0130000E – 545500N 0125100E – along FIR boundary –
553356N 0124651E.

Vertical limits: FL195 – UNL

Airspace classification: FL195 – FL 660 C
FL660 – UNL G

2.4.1.2 Area L3

Lateral limits: 551458N 0125956E – 545500N 0130000E – 545500N 0125100E –
 along FIR boundary – 551402N 0124132E – 551458N 0125956E.
 Vertical limits: 3500 feet MSL – FL195
 Airspace classification: 3500 feet MSL – FL 95 E
 FL95 – FL195 C

3 Procedures for Coordinations.

3.1 Definitions

A release is an authorization for the accepting ATS unit to climb, descend and/or turn (by no more than 45°) a specific aircraft before the transfer of control point. The transferring ATS unit remains responsible for separation within its Area of Responsibility unless otherwise agreed.

Traffic may be cleared direct to its co-ordination point (COP) without prior coordination.

3.2 IFR flights from Bremen FIR to Copenhagen FIR.

Destination	ATS Route	COP	Next Sector	Level Allocation	Special Conditions
Copenhagen EKCH Roskilde EKRK	T299	KOSEB	A	FL 180	NOTE A,E
	T296	NIKDA	A	FL 180	NOTE A,E
	P605	AMICH	A	FL 200	NOTE B
	UP605	PIBUL	A	FL 200	NOTE B
	UZ706	PIXID	A	FL 200	NOTE B
	UN851	ELKIM	A	FL 200	NOTE B
	UZ711	UNGEM	A	FL 200	NOTE B
	UP615	ALS	C	FL290	NOTE C
	UP729	BATOB	C	FL 310	
Billund EKBI	M852	ALS	C	FL 190	
	(U)P615	ALS	C	FL 190	
	UP729	BATOB	C	FL190	
	(U)N873	TUSKA	N	FL 190	
Malmö ESMS	P605	AMICH	A	RFL (even)	
	UP605	PIBUL	A	FL 360	NOTE D

Malmö ESMS <i>(continued)</i>	UZ706	PIXID	A	FL 360	NOTE D
	UN851	ELKIM	A	FL 360	NOTE D
	UZ711	UNGEM	A	FL 360	NOTE D
Departure	ATS Route	COP	Next Sector	Level Allocation	Special Conditions
Hamburg EDDH HH-Finkenwerder EDHI Lübeck EDHL	Any routing	prior AoR		FL 240 or RFL if lower	
Flensburg EDXF Schleswig ETNS	Any routing	prior AoR		FL 60 or RFL if lower	
Overflights	ATS Route	COP	Next Sector	Level Allocation	Special Conditions
	(U)M602	SONAL	A	RFL (even)	NOTE F
	(U)M725	SONAL	A	RFL (even)	NOTE F

Note A: Unless otherwise coordinated, traffic may be routed direct to MONAK provided that traffic passes east of ROSOK.

Note B: Bremen shall clear traffic on this route to cross GESKA at FL200.

Note C: Bremen shall clear traffic on this route to cross ALS at FL290 or below.

Note D: Bremen shall clear traffic on these routes to cross GESKA at FL360.

Note E: Bremen shall ensure a timely hand-off to Copenhagen. Unless otherwise coordinated, these aircrafts are in respect of known traffic released to Copenhagen for

- turns in respect of other sectors within Bremen FIR and Malmö FIR,
- further descend,
- change of speed.

Note F: Unless otherwise coordinated, traffic may be routed direct to CDA provided that traffic passes east of ROSOK.

3.3 IFR flights from Copenhagen FIR to Bremen FIR.

Destination	ATS Route	COP	Next Sector	Level Allocation	Special Conditions
Hamburg EDDH HH-Finkenwerder EDHI	N850 T503 T504	MIC	ALEH	FL 200	NOTE A
Lübeck EDHL	N850 T503 T504	MIC	ALEH	FL 160	NOTE A
Hamburg EDDH HH-Finkenwerder EDHI Lübeck EDHL	UP615 UM852	TUGDU	EID	FL 220	
Flensburg EDXF Schleswig ETNS	Any routing	prior AoR	EID	FL 70 or RFL if lower	

Departure	ATS Route	COP	Next Sector	Level Allocation	Special Conditions
Copenhagen EKCH Roskilde EKRK	M602 M725	SONAL	MRZ	FL 190 or RFL if lower	
Overflights	ATS Route	COP	Next Sector	Level Allocation	Special Conditions
	(U)T503	MIC	HOL	RFL (odd)	NOTE A,B
	N850	MIC	ALEH	RFL (odd)	NOTE A
	UN850	MIC	HOL	RFL (odd)	NOTE A
	T504	MIC	HOL	RFL (odd)	NOTE A,B

Note A: Unless otherwise coordinated, traffic may be routed direct to MIC. Copenhagen shall ensure that this traffic passes the AoR boundary west of track CDA-MIC.

Note B: Next sector for traffic below FL245 is Aller East High sector (ALEH).

3.4 **VFR flights from Copenhagen FIR to Bremen FIR**

For controlled VFR flights and VFR at night flights above 2500 feet GND coordination, transfer of control and transfer of communication shall take place as for IFR flights. Uncontrolled VFR flights shall be transferred to the appropriate sector if in radio contact. If online, EDWW_I_CTR (Bremen Information), 119.82, shall be the primary sector for uncontrolled VFR flights.

3.5 **VFR flights from Bremen FIR to Copenhagen FIR**

For controlled VFR flights, transfer of control shall take place as for IFR flights. Uncontrolled VFR flights shall be transferred to the appropriate sector if in radio contact.

4 **Transfer of Control and Transfer of Communications**

4.1 **Transfer of Control**

Transfer of Control shall take place at the AoR boundary.

4.2 **Transfer of Communications**

Transfer of Communications shall take place no later than Transfer of Control. Transfer of Communication shall take place only after Transfer of Radar Identification (Hand-off) has been accepted by the receiving ATS unit.

4.3 **Transfer of Radar Identification (Hand-off)**

Transfer of Radar Identification shall take place without prior coordination provided that

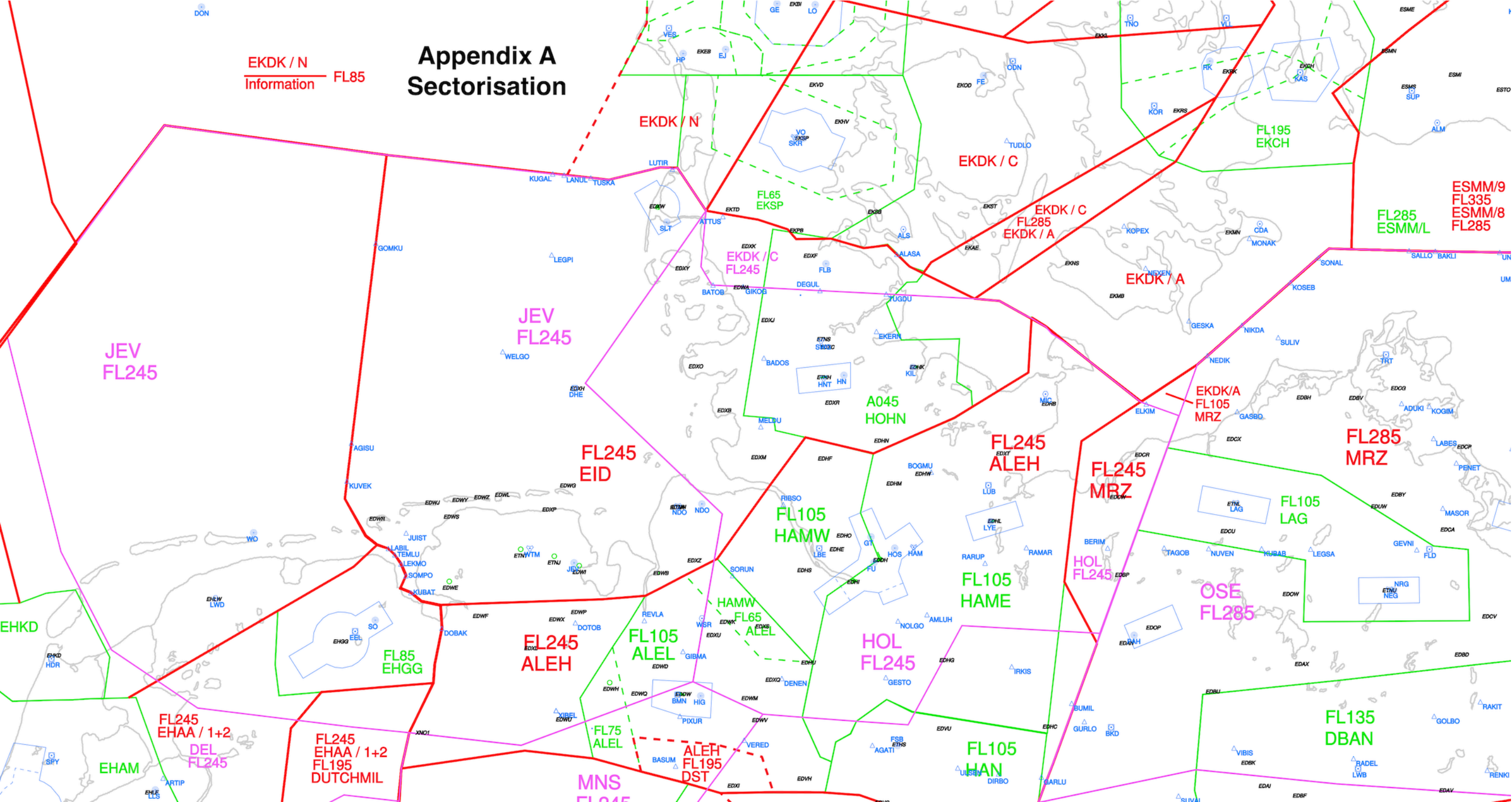
1. the minimum distance between two successive flights to be transferred is at least 10NM and constant or increasing
2. any direct routing which deviates from the flight planned route of the flight to be transferred is indicated in the scratchpad
3. any assigned heading is either indicated in the scratchpad or the pilot of the flight to be transferred is advised to report the assigned heading to the next ATS unit.

4.4 **SSR Code Assignment**

Both ATS units shall transfer flights on verified discrete SSR codes. Any change of SSR code by the accepting ATS unit may only take place after the transfer of control point.

Appendix A Sectorisation

EKDK / N
Information FL85



Appendix B

Area of Responsibility and Delegated Airspace.

