to	Distribution list	**LoA 01**

from	J.-H. Baerens, CC/FB-N	phone	0421 5372 143	date DRF until	19.08.2011 06.10.2011

Amendment of the LoA between ACC Copenhagen and Bremen ACC wef 25.08.2011

1. Essentials

The amendment contains all changes, caused by the split of sector EID into EIDE and EIDW.

Copenhagen ACC announced that they will not be able to adapt their voice communication system before AIRAC 22SEP11. Until then, in case sectors EIDE and EIDW will not be worked combined, all telephone calls from Copenhagen ACC will be received at sector EIDW. EIDW will need to forward such calls to EIDE by connecting Copenhagen ACC with EIDE.

Additionally I like to draw your attention to paragraph D.3.2.7 "Arriving aircraft to EKSB and EKPB from the Bremen ACC Eider East sector", sentence 2. Since the AoR of Schleswig has been increased to 4500 AMSL up to the AoR boundary with Copenhagen ACC, sector EIDE will either need to restrict a possible release to 5000 AMSL in order to stay clear of Schleswig AoR, if the AoR is activated. Or EIDE would need to call Schleswig APP before issuing the release to Copenhagen ACC, if it is intended to give an unrestricted release in the sense of this paragraph. The intention is to delete this sentence with one of the next amendments to avoid misunderstandings.

2. List of Changes

Date	Parts	Page(s)	add, replace or delete
25.08.2011	amendment LoA	all	replace

Axel Brandt
Chief of Support

Hans-Michael Jung
Chief of Section

Sector families affected:												
	North A*)	North B*)	East A	East B*)	South	FDS	FIS	FMP	DA	SV CC	SV FDA	Office
mandatory	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑
* only applicable to sector(s): EIDE, EIDW												

This LoA is valid for:												
	North A*)	North B*)	East A	East B*)	South	FDS	FIS	FMP	DA	SV CC	SV FDA	Office
	☑	☑	☐	☑	☐	☑	☑	☑	☑	☑	☑	☑
* only applicable to sector(s): EIDE, EIDW, HEI, HAME, MRZ												

Distribution list: LoA I
Mr T. Teichert Mr U. Voigt

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LETTER OF AGREEMENT

between

Statens Luftfartsvæsen
CAA Denmark
ACC Copenhagen

and

Deutsche Flugsicherung GmbH
Control Centre Bremen
Bremen ACC

Effective: 22.10.2009

1 General.

1.1 Purpose.

The purpose of this Letter of Agreement is to define the coordination procedures to be applied between ACC Copenhagen and Bremen ACC when providing ATS to General Air Traffic and/or Operational Air Traffic (IFR/VFR).

These procedures are supplementary to those specified in ICAO, Eurocontrol and/or National documents.

1.2 Operational Status.

The ATS-units shall keep each other advised of any changes in the operational status of their facilities and navigational aids which may affect the procedures specified in this Letter of Agreement.

1.3 Definitions for General Air Traffic and Operational Air Traffic.

1.3.1 General Air Traffic (GAT):

All flights which are conducted in accordance with the rules and procedures of ICAO and/or the national civil aviation regulations and legislation.

1.3.2 Operational Air Traffic (OAT):

All flights which do not comply with the provisions stated for GAT and for which rules and procedures have been specified by appropriate national authorities.

2 Areas of Responsibility and Delegation of the Responsibility for the Provision of ATS.

2.1 Areas of Responsibility.

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

Note: See para 2.2 for the description of the areas where delegation of the responsibility for the provision of ATS is applicable**.**

2.1.1 ACC Copenhagen.

Lateral limits: Copenhagen FIR as described in AIP Denmark.

Vertical limits: GND - FL 660.

ACC Copenhagen is responsible for provision of Air Traffic Services to GAT and OAT.

ICAO airspace classification for the area of responsibility of ACC Copenhagen along the common boundary of the areas of responsibility of ACC Copenhagen and Bremen ACC, is described in Annex B to this Letter of Agreement.

2.1.2 Bremen ACC.

Lateral limits: Bremen FIR and Rhein UIR as described in AIP Germany.

Vertical limits: Bremen FIR: GND - FL 245.
Rhein UIR: FL 245 - FL 285.

Bremen ACC is responsible for provision of Air Traffic Services to GAT and OAT.

ICAO airspace classification for the area of responsibility of Bremen ACC along the common boundary of the areas of responsibility of Bremen ACC and ACC Copenhagen, is described in Annex B to this Letter of Agreement.

2.2 Delegation of the Responsibility for the Provision of ATS.

2.2.1 General.

2.2.1.1 The provision of ATS in respect of delegations of ATS between ACC Copenhagen and Bremen ACC includes the following services:

- Air traffic control service,
- Flight Information service for controlled flights and
- Alerting service.

2.2.1.2 Between position 550409N 0082331E and position 544554N 0100313E the FIR/UIR-boundaries are - with regard to provision of Air Traffic Services - generally replaced by a boundary line of responsibility specified by following positions - see also Appendix 1:

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

2.2.2 Delegation of ATS from ACC Copenhagen to Bremen ACC.

2.2.2.1 Sylt Area E - see Appendix 1.

Within the Copenhagen FIR the responsibility for the provision of ATS in accordance with the airspace classification may be delegated temporarily from ACC Copenhagen to Bremen ACC within the Sylt Area E:

Lateral limits:	551000N 0081245E	-	550400N 0082000E	-
	along FIR boundary	-	550000N 0075500E	-
	550300N 0075500E	-	551000N 0080345E	-
	551000N 0081245E.			

Vertical limits: 1000FT GND - 3500 FT MSL.

Airspace classification: E

The following applies for the area - see also para. 2.2.3:

- ATS-delegation may take place when requested by Bremen ACC.
- ATS-delegations may only take place during times of non-activation of EK D373 and are automatically suspended at midnight same day.
- ACC Copenhagen is responsible for provision of ATS to VFR-flights within the area.

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

2.2.3 Delegation of ATS from Bremen ACC to ACC Copenhagen.

2.2.3.1 Schwerin North Area - see Appendix 2.

Within the Bremen FIR/Rhein UIR the responsibility for the provision of ATS in accordance with the ICAO airspace classification has been delegated from Bremen ACC and Karlsruhe UAC to ACC Copenhagen within the Schwerin North Area:

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

Vertical limits: FL 105 - FL 660.

Airspace classification: C

The following applies for the area - see also para. 2.2.3:

- Prior coordination with ACC Copenhagen is required whenever special or security flights operating under control of a CRC are entering the area.

2.2.3.2 Michaelsdorf Area - see Appendix 2.

Within the Bremen FIR and Hannover UIR the responsibility for the provision of ATS in accordance with the airspace classification has been delegated from Bremen ACC and UAC Maastricht/DFS UAC Maastricht to ACC Copenhagen within the Michaelsdorf Area:

Lateral Limits:	542700N 0120000E	-	541744N 0113818E	-
	543400N 0105900E	-	543920N 0104000E	-
	along FIR/UIR-boundary	-	542700N 0120000E.	

Vertical Limits: GND - FL 660.

Airspace classification:	FL 100 - FL 660	C
	2500 FT GND - below FL 100	E
	GND - below 2500 FT GND	G

The following applies for the area - see also para. 2.2.3:

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

2.2.4 Other Areas.

Delegations of ATS to/from other air traffic services units along the common boundary of the areas of responsibility of ACC Copenhagen and Bremen ACC are described in Annex B to this Letter of Agreement.

2.2.5 Alerting Service within ATS-delegated Airspace.

The ATS-unit responsible for the provision of ATS, by virtue of delegation, shall provide alerting service and shall notify immediately the Supervisor of the delegating ATS-unit in case of an emergency.

The Supervisor of the delegating ATS-unit shall notify the appropriate Rescue Coordination Centre as required.

3 Procedures.

3.1 The procedures to be applied by ACC Copenhagen and Bremen ACC are detailed in the Annexes to this Letter of Agreement:

Annex A:	Definitions and Abbreviations
Annex B:	Area of Common Interest
Annex C:	Exchange of Flight Data
Annex D:	Procedures for Coordination
Annex E:	Transfer of Control and Transfer of Communications
Annex F:	Radar Based Coordination Procedures
Annex G:	Fall-Back Operations and Contingency Arrangements

3.2 These procedures shall be promulgated to the operational staff of the ATS-units concerned.

4 Revisions and Deviations.

4.1 Revision of the Letter of Agreement.

The revision of the present Letter of Agreement, excluding Annexes, requires the mutual written consent of the signatory authorities.

4.2 Revision of the Annexes to the Letter of Agreement.

The revision of Annexes to the present Letter of Agreement requires the mutual written consent of the authorities designated by the respective signatory approving authorities, normally the Heads of Operations at the respective units.

4.3 Temporary Deviations.

When necessary, the Supervisors of the ATS-units concerned may introduce, by mutual agreement and for a specified time period, temporary modifications to the procedures laid down in the Annexes to the present Letter of Agreement.

4.4 Incidental Deviations.

Instances may arise where incidental deviations from the procedures specified in the Annexes to this Letter of Agreement may become necessary. Under these circumstances air traffic controllers are expected to exercise their best judgement to ensure the safety and efficiency of air traffic.

5 Cancellation.

5.1 Cancellation of the present Letter of Agreement by mutual written agreement of the respective Approving Authorities may take place at any time.

5.2 Cancellation of this Letter of Agreement by either Approving Authority is possible at any time, provided that the cancelling party declares its intention to cancel the Letter of Agreement with a minimum prenotification time of 6 months before the date the cancellation is to take effect.

6 Interpretation and Settlement of Disputes.

6.1 Should any doubt or diverging views arise regarding the interpretation of any provision of the present Letter of Agreement, or in case of dispute regarding its application, the parties shall endeavour to reach a solution acceptable to both of them.

6.2 Should no agreement be reached, each of the parties shall refer to a higher level of its national aviation administration, to which the dispute shall be submitted for settlement.

7 Validity.

This Letter of Agreement becomes effective 22.10.2009 and supersedes the Letter of Agreement between ACC Copenhagen and Bremen ACC dated 29.12.2007.

Copenhagen
Date: 15/10 - 2009

Nils la Cour Dragheim
Statens Luftfartsvæsen
CAA Denmark

Bremen
Date: 19/10/2009

i. V.
Werner Spier
Deutsche Flugsicherung GmbH
Control Centre Bremen
Spokesman and Head of Operations

Copenhagen
Date: 13.10.09

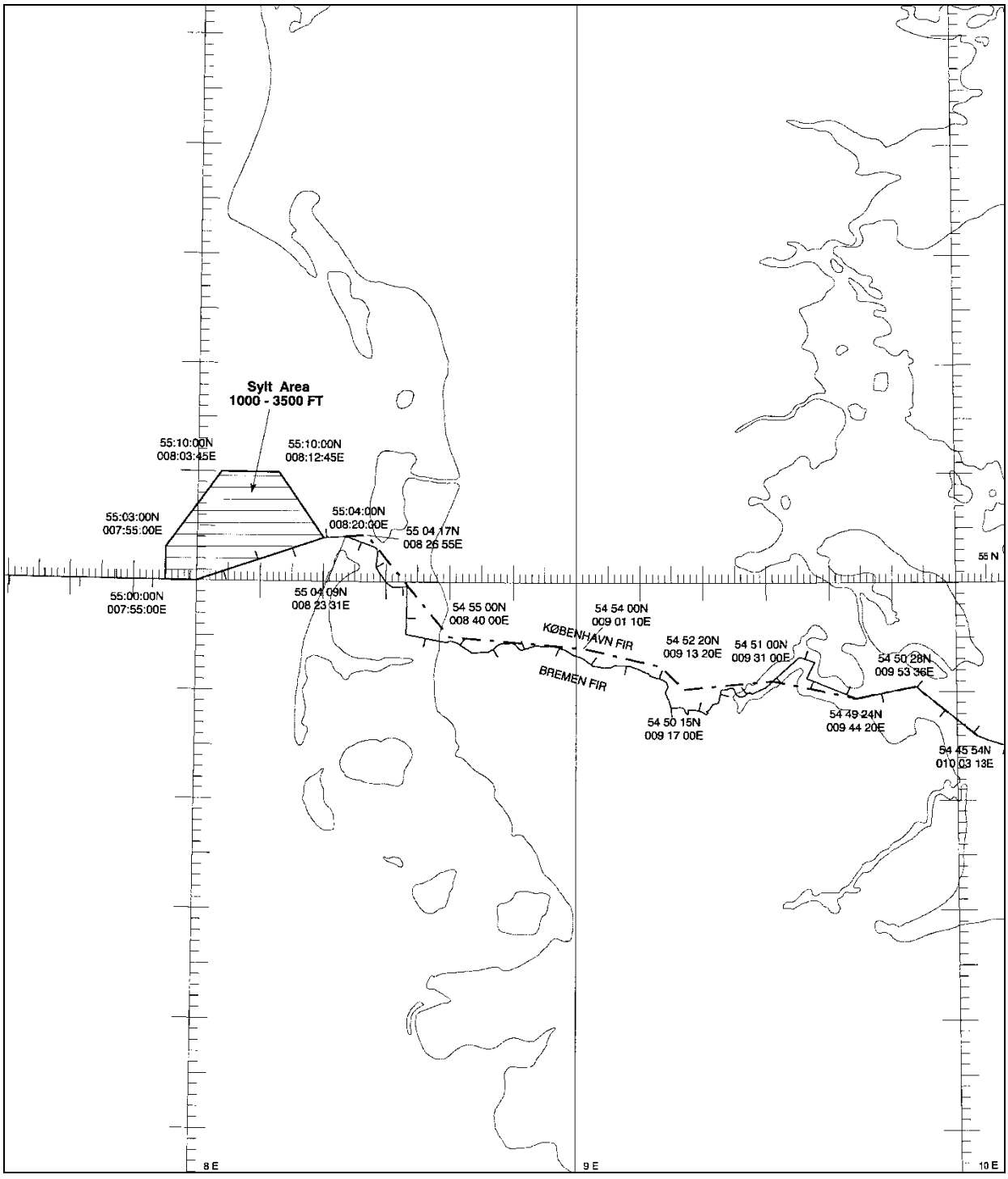
C. Skjærbæk
ACC Copenhagen

Langen
Date: 22. 10. 2009

i. V.
Andre Biestmann
Deutsche Flugsicherung GmbH
Head of ATM Operations and Strategy

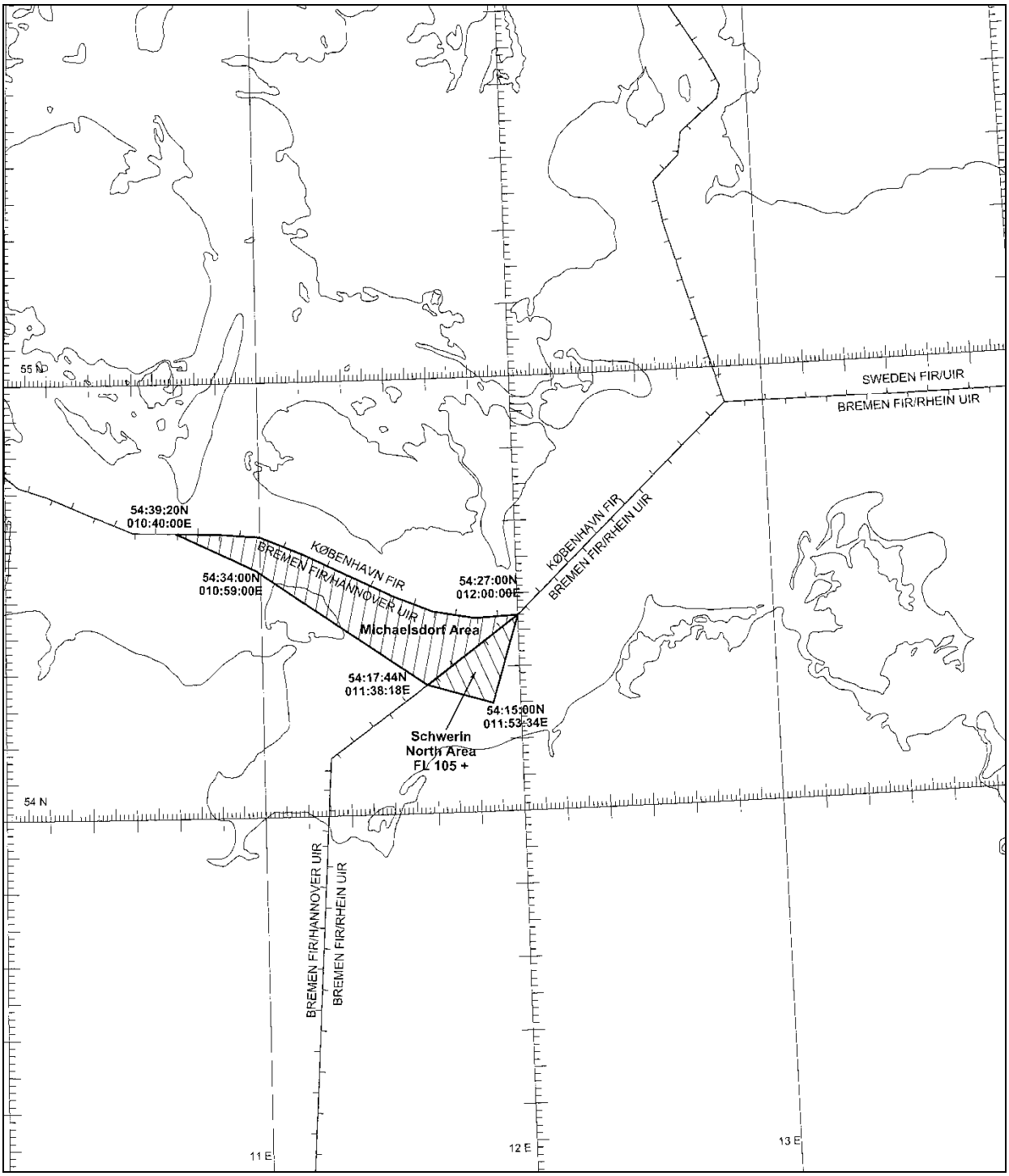
Appendix 1

Sylt Area E and AoR-boundary (see para. 2.2).



Appendix 2

Schwerin North Area and Michaelsdorf Area (see para. 2.2).



Annex A.

Definitions and Abbreviations.

Effective: 22.10.2009
Revised: 18.11.2010

A.1 Definitions.

A.1.1 **Area of Responsibility.**

An airspace of defined dimensions where a sole ATS-unit has responsibility for providing air traffic services.

A.1.2 **Area of Common Interest.**

A volume of airspace as agreed between 2 ATS-units, extending into the adjacent/subjacent Areas of Responsibility, within which airspace structure and related activities may have an impact on air traffic coordination procedures.

A.1.3 **Approval Request.**

Request from an ATS-unit to the ATS-unit concerned for an approval of:

- an aircraft not yet airborne, whenever the flying time to the transfer of control point is less than the agreed minimum prenotification time, or
- an aircraft in flight intending to operate under conditions other than those described in mutually agreed procedures.

A.1.4 **Expedite Clearance.**

An urgent clearance request from an ATS-unit to the ATS-unit concerned for an aircraft in flight whenever the flying time to the transfer of control point is less than the agreed minimum prenotification time.

A.1.5 **Division Level.**

The level dividing two super-imposed areas of responsibility for the provision of ATS.

A.1.6 **General Air Traffic.**

All flight which are conducted in accordance with the rules and procedures of ICAO and/or the national civil aviation regulations and legislation.

A.1.7 **Operational Air Traffic.**

All flights which do not comply with the provisions stated for GAT and for which rules and procedures have been specified by appropriate national authorities.

A.1.8 **Reduced Vertical Separation Minimum.**

A vertical separation minimum of 300 m (1 000 ft) which is applied between FL 290 and FL 410 inclusive, on the basis of regional air navigation agreement and in accordance with conditions specified therein.

A.1.8.1 RVSM Approved Aircraft.

Aircraft that have received State approval for RVSM operations within the EUR RVSM airspace.

A.1.9 **Release.**

A.1.9.1 Release for Climb.

An authorization for the accepting unit to climb (a) specific aircraft before the transfer of control.

Note: The transferring unit remains responsible for separation within its Area of Responsibility unless otherwise agreed.

A.1.9.2 Release for Descent.

An authorization for the accepting unit to descend (a) specific aircraft before the transfer of control.

Note: The transferring unit remains responsible for separation within its Area of Responsibility unless otherwise agreed.

A.1.9.3 Release for Turn.

An authorization for the accepting unit to turn (a) specific aircraft away from the current flight path by not more than 45^{o} before the transfer of control.

Note: The transferring unit remains responsible for separation within its Area of Responsibility unless otherwise agreed.

A.1.10 **State Aircraft.**

For the purposes of EUR RVSM, only aircraft used in military, customs and police services shall qualify as State aircraft.

A.2 Abbreviations.

ABI	Advance Boundary Information
ACC	Area Control Centre
ACI*	Area of Common Interest
ACT	Activation Message
AFIS	Aerodrome Flight Information Service
AIP	Aeronautical Information Publication
AMC*	Airspace Management Cell
AOCS*	Air Operations Control Station
AoR*	Area of Responsibility
ATC	Air Traffic Control
ATCC	Air Traffic Control Centre
ATS	Air Traffic Services
AUP*	Airspace Use Plan
CA*	Contingency Area
CAA	Civil Aviation Authorities
CBA*	Cross Border Area
CCP*	Contingency Contact Point
CDR*	Conditional Route
CFMU*	Central Flow Management Unit
COIF*	Copenhagen Information
COP*	Coordination Point
CRAM*	Conditional Route Availability Message
CRC*	Control and Reporting Centre
CTA	Control Area
DL*	Division Level
E*	Executive Controller (Bremen ACC)
EC*	Executive Controller (ACC Copenhagen)
ETO	Estimated Time Over Significant Point
EUR	European
FDA*	Flight Data Assistant
FIR	Flight Information Region
FIS	Flight Information Service
FL	Flight Level
FMP*	Flow Management Position
FRQ*	Frequency
FT	Feet
GAT*	General Air Traffic
GND	Ground
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
KHZ	Kilohertz
LAM	Logical Acknowledge Message
LoA*	Letter of Agreement
MDA*	Military Data Assistant
MFC*	Multi Frequency Coding (telephone system)
MHZ	Megahertz
Mil	Military
MSL	Mean Sea Level
MVPA*	Military Variable Profile Area
NM	Nautical Mile
OAT*	Operational Air Traffic
OLDI*	On-line Data Interchange
OPS*	Operations
ORCAM	Originating Region Code Assignment Method
PAC*	Preactivation Message
P*	Planner Controller (Bremen ACC)
PLC*	Planner Controller (ACC Copenhagen)
RTF	Radio Telephony
RVSM	Reduced Vertical Separation Minimum
RWY	Runway
SID	Standard Instrument Departure
SAR	Search and Rescue
SSR	Secondary Surveillance Radar
STAR	Standard Arrival Route
TIZ	Traffic Information Zone
TSA*	Temporary Segregated Airspace
TWR	Aerodrome Control Tower
UAC	Upper Area Control Centre
UHF	Ultra High Frequency
UIR	Upper Flight Information Region
UTC	Coordinated Universal Time
VFR	Visual Flight Rules
VHF	Very High Frequency

Note: Abbreviations marked with an * are non-ICAO abbreviations.

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Annex B.

Area of Common Interest.

Effective: 22.10.2009
Revised: 18.11.2010, hand amendment 25.08.2011

B.1 Airspace Structure and Classification within the Area of Common Interest.

B.1.1 **Copenhagen FIR.**

Area		Vertical limits	Airspace Classification
CTA		FL 195 - FL 660	C - see note
CTA	east of 0074257E	3500 FT MSL - FL 195	E
CTA Sylt Area E	0075500E - 0082000E	1000 FT GND - 3500 FT MSL	
FIR	west of 0074257E	GND - FL 195	G
FIR excl. CTA Sylt Area E	east of 0074257E	GND - 3500 FT MSL	

Note: Enroute VFR-flights are not allowed above FL 195.

B.1.2 **Bremen FIR.**

Area		Vertical limits	Airspace Classification
CTA		FL 100 - FL 245	C - see note 1
		2500 FT GND - below FL100	E - see note 2
CTA Sylt	0075500E - 0083314E	1000 FT GND - below 2500 FT GND	
CTA Eider	0090722E - 0092222E		
FIR excl. CTA Sylt/Eider		GND - below 2500 FT GND	G - see note 3

Note 1: Enroute VFR-flights are not allowed above FL 195.

Note 2: At night, separation shall be provided between VFR-flights and IFR-flights in airspace of classification E.

Note 3: IFR-flights are not allowed in airspace classification G east of 0074320E.

B.1.3 **Rhein UIR.**

Area	Vertical limits	Airspace Classification
UIR	FL 245 - FL 660	C

B.2 Sectorisation.

The sectorisation within the ACI is shown in Appendix 1 - 2 to Annex B.

B.3 Special Areas within the Area of Common Interest.

B.3.1 Delegations of the Responsibility for the Provision of ATS to/from other ATS-units within the ACI.

B.3.1.1 Delegation of ATS from Bremen ACC and Karlsruhe UAC to UAC Maastricht/DFS UAC Maastricht.

Within the Rhein UIR the responsibility for the provision of ATS in accordance with the airspace classification has been delegated from Bremen ACC and Karlsruhe UAC to UAC Maastricht/DFS UAC Maastricht within the following area:

Schwerin South Area - see Appendix 2 to Annex B.

Lateral limits:	541500N 0115334E	-	524350N 0110626E	-
	540800N 0111530E	-	541744N 0113818E	-
	541500N 0115334E.			

Vertical limits: High: FL 285 - FL 660 (delegated from Karlsruhe UAC)
Low: FL 245 - FL 285 (delegated from Bremen ACC).

Airspace classification: C.

UAC Maastricht is responsible for provision of ATS to GAT.
DFS UAC Maastricht is responsible for provision of ATS to OAT.

B.3.1.2 Delegation of ATS from UAC Maastricht/DFS UAC Maastricht to ACC Copenhagen.

Within the Hannover UIR the responsibility for the provision of ATS in accordance with the airspace classification has been delegated from UAC Maastricht/DFS UAC Maastricht to ACC Copenhagen within the following area:

Alsie Area - see Appendix 3 to Annex B.

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

Vertical limits: FL 245 - FL 660.

Airspace classification: C.

B.3.1.3 Delegation of ATS from ATCC Malmö to ACC Copenhagen.

Within the Sweden FIR/UIR the responsibility for the provision of ATS in accordance with the airspace classification has been delegated from ATCC Malmö to ACC Copenhagen within the following areas:

L3/H2 Areas - see Appendix 2 to Annex B.

Lateral limits:	H2:	553356N 0124651E	-	552158N 0130146E	-
		551458N 0125956E	-	545500N 0130000E	-
		545500N 0125100E	-	along FIR-boundary	-
		553356N 0124651E.			
	L3:	551458N 0125956E	-	545500N 0130000E	-
		545500N 0125100E	-	along FIR-boundary	-
		551402N 0124132E	-	551458N 0125956E.	

Vertical limits:	H2:	FL 195 - FL 660
	L3:	3500 FT MSL - FL 195.

Airspace Classification:	FL 95 - FL 660	C
	3500 FT MSL - FL 95	E

B.3.1.4 Delegation of ATS to local ATS-units within the ACI.

Within the ACI, local ATS-units have local AoR's as follows:

- ATC Skrydstrup: Skrydstrup Local ATS Area as published in AIP Denmark.
- AFIS Sønderborg: Sønderborg TIZ as published in AIP Denmark.

Unless otherwise described in Annex D to this LoA, the above local AoR's have no impact on coordination procedures between ACC Copenhagen and Bremen ACC. Each ATS-unit will be responsible for the necessary coordination with its national local ATS-units.

B.3.2 **Other Areas.**

B.3.2.1 General.

R- and D-areas within the ACI are published in the relevant AIP's and are shown in Appendix 1 - 2 to Annex B.

The German MVPA's Basic 1A-E/2A-E are published in AIP Germany and are shown in Appendix 2 to Annex B.

B.3.2.2 Release Lines.

The following release lines in Bremen FIR are related to standard releases from Bremen ACC to ACC Copenhagen as specified in Annex D to this LoA:.

- Release Line Rostock: see Appendix 2 to Annex B.

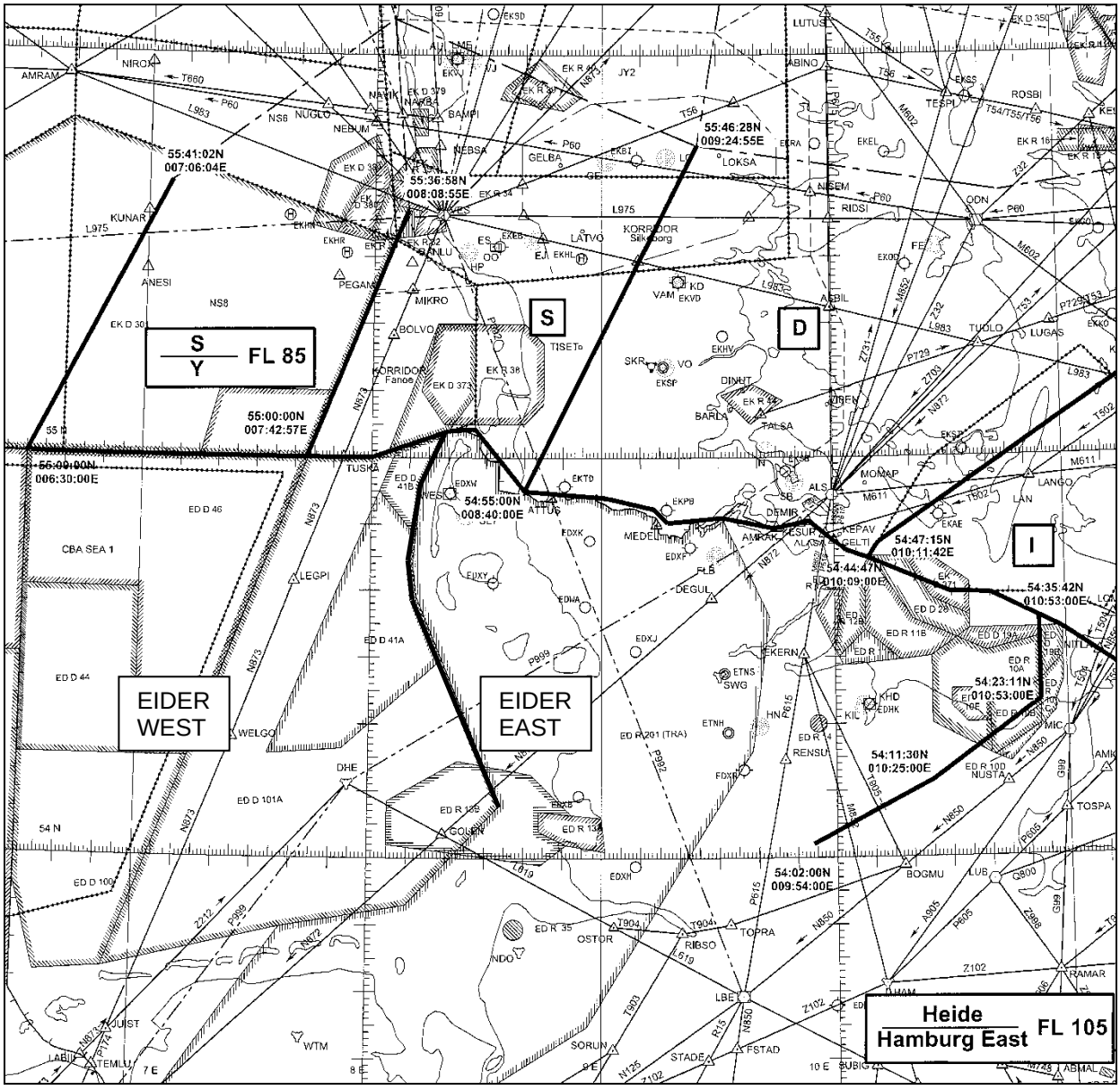
Lateral limits	545500N 0130000E	-	545107N 0130000E	-
	543033N 0122942E	-	541236N 0120436E	-
	541500N 0115334E.			

B.4 Non-published Coordination Points.

Not applicable.

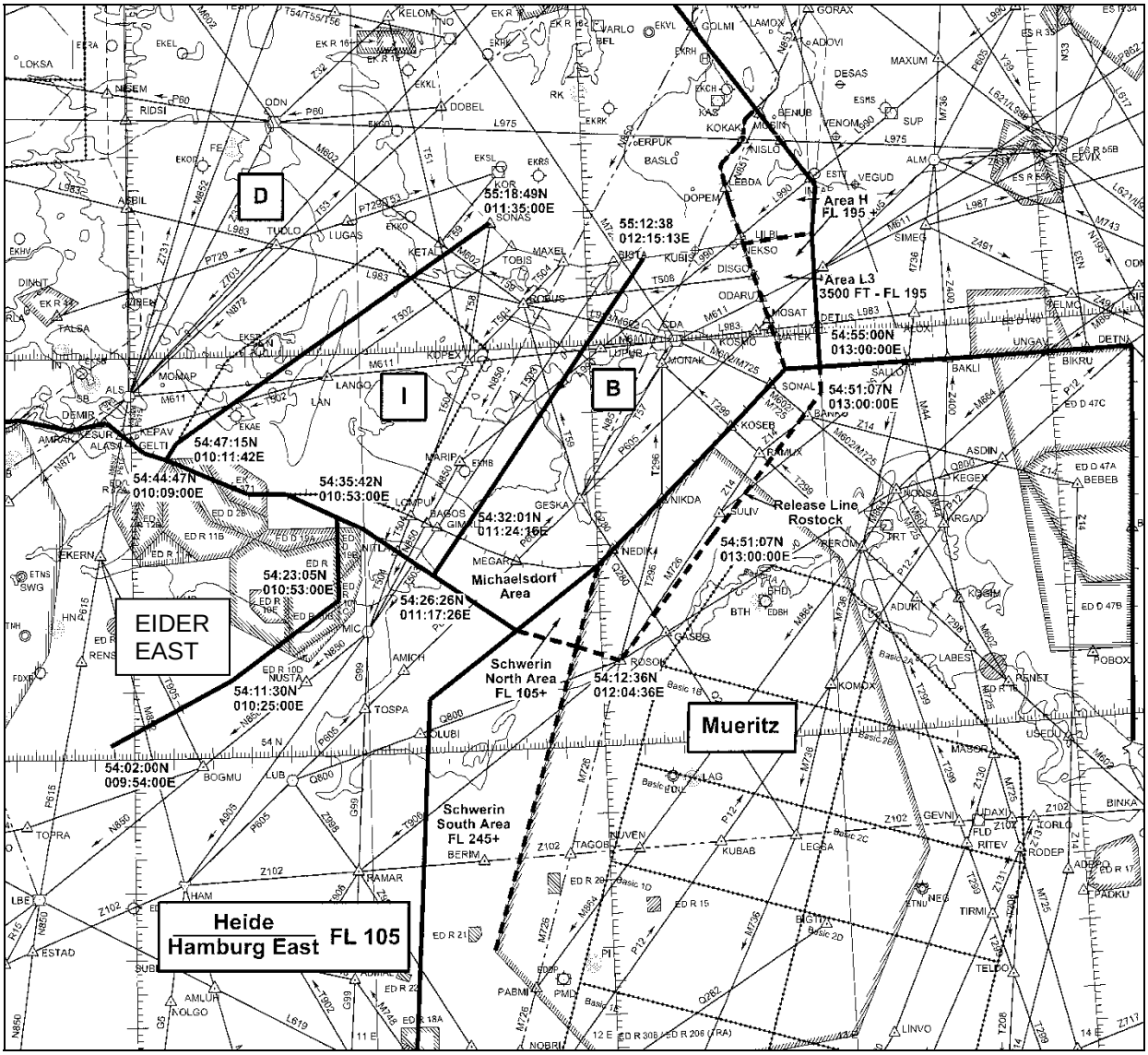
Appendix 1 to Annex B

Sectorisation West.



Appendix 2 to Annex B

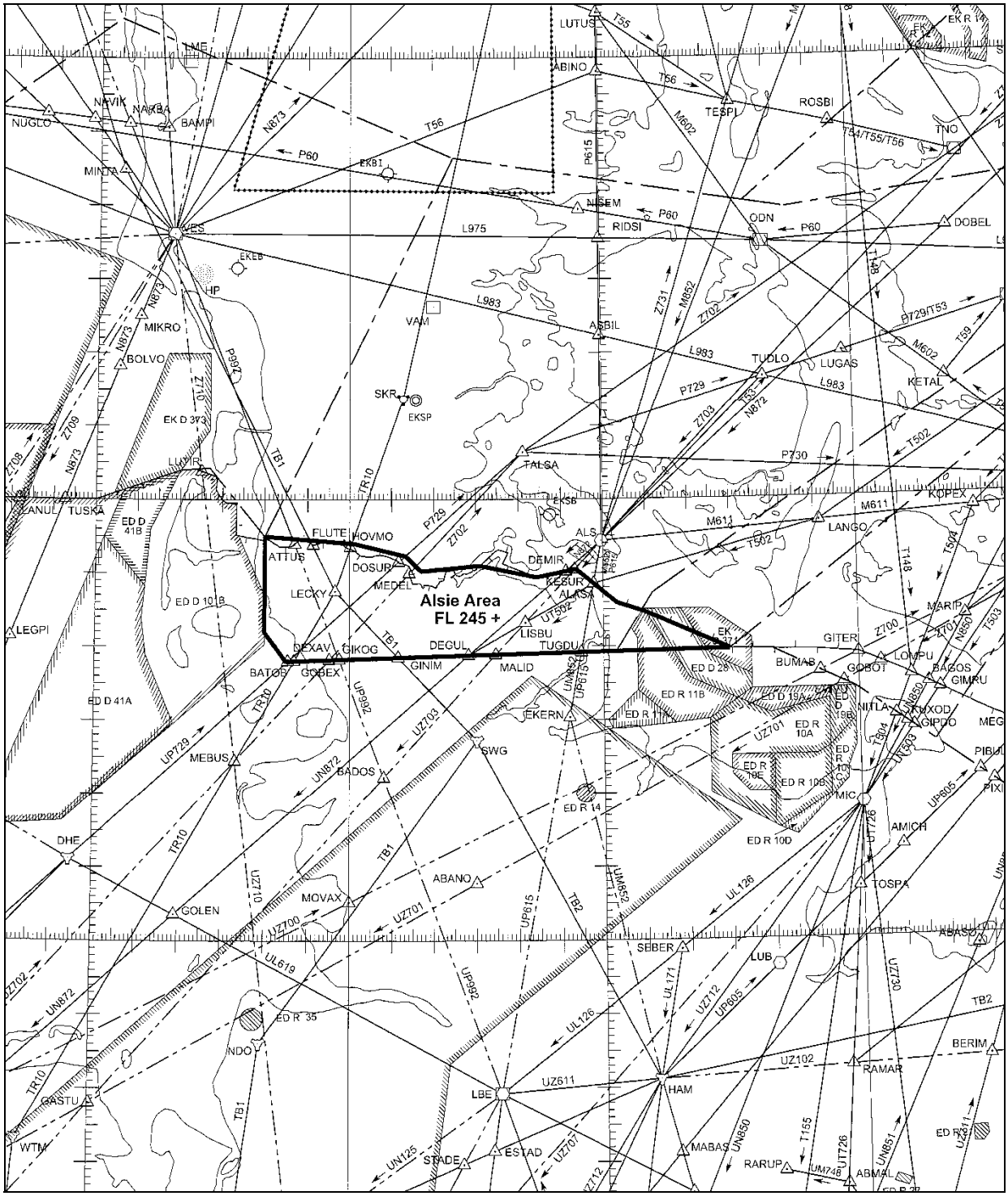
Sectorisation - East.



Note: Coordinates for Release Line Rostock: see para. B.3.2.2.

Appendix 3 to Annex B

Alsie Area (at and above FL 245).



Annex C.

Exchange of Flight Data.

Effective: 22.10.2009
Revised: 06.05.2010, hand amendment 25.08.2011

C.1 General.

C.1.1 **Basic Flight Plans.**

Basic flight plan data should normally be available at the ATS-units.

C.1.2 **Current Flight Plan Data.**

Messages, including current flight plan data, shall be forwarded by the transferring ATS-unit to the accepting ATS-unit either by automatic data exchange or by telephone to the appropriate sector/position.

C.1.2.1 Automatic Data Exchange.

ABI/PAC/ACT/LAM messages are exchanged between the ATS-units in accordance with Appendix 1 to Annex C.

C.1.2.2 Verbal Estimates.

For conditions that are not supported by the automatic data exchange, verbal estimates will be exchanged.

A verbal estimate shall be passed to the appropriate sector at the accepting ATS-unit at least 10 minutes prior, but not earlier than 30 minutes before the aircraft is estimated to pass the transfer of control point, and shall contain:

a) Callsign.

Note: To indicate that the flight plan is available, the accepting ATS-unit should state aircraft type and destination after having received the callsign.

b) SSR code.

c) ETO for the appropriate COP as laid down in Annex D to this LoA.

d) Cleared level, specifying climb or descent conditions if applicable, at the transfer of control point.

Requested level if different from cleared level.

e) Other information, if applicable.

Normally, verbal estimates will not be passed in parallel with ACT messages.

In all cases, verbally passed data shall take precedence over data exchanged automatically.

C.1.2.3 Failure of Automatic Data Exchange.

In the event of a failure which prevents the automatic transfer of data, the Supervisors shall immediately decide to revert to the verbal exchange of estimates.

After recovery from a system failure, the Supervisors shall agree as to when they will revert to automatic data exchange.

C.1.3 **Non-availability of Basic Flight Plan Data.**

If the accepting ATS-unit does not have basic flight plan data available, additional information may be requested from the transferring ATS-unit to supplement the ACT message or a verbal estimate.

C.1.4 **Revisions.**

Any significant revisions to the flight data are to be transmitted to the accepting ATS-unit.

Time differences of 5 minutes or more are to be exchanged.

Changes to the coordinated levels within 5 minutes of the ETO for the transfer of control point are subject to an Approval Request.

C.1.5 **Expedite Clearance and Approval Requests.**

Whenever a minimum time of 10 minutes prior the transfer of control point for ACT or verbal estimate cannot be met, either an expedite clearance request or an approval request, as appropriate, shall be initiated.

C.2 Means of Communications and their Use.

C.2.1 **Equipment.**

The following lines are available between ACC Copenhagen and Bremen ACC:
- 1 data line
- 2 telephone lines (MFC)

C.2.2 **Telephone Coordination.**

All telephone communications should be terminated with the initials of both parties concerned.

Exchange of flight plan data, estimates and control messages by telephone shall be carried out in accordance with the tables below:

C.2.2.1 Messages from ACC Copenhagen to Bremen ACC.

Receiving Sector/COPs	Message	Position	Extension
Müritz SONAL/KOSEB/NIKDA/NEDIK GND - FL 285	Flight Plan Data and Estimates	EDWW FDA 4	34 2127
	Control Messages, Expedite Clearances, Approval Requests and Revisions	MRZ P	34 2037
	Radar Coordination	MRZ E	34 2027
Hamburg East AMICH/MIC GND - FL 105	Flight Plan Data and Estimates	EDWW FDA 5	34 2142
	Control Messages, Expedite Clearances, Approval Requests and Revisions	HAME P	34 2054
	Urgent Radar Coordination	HAME E	34 2044
Heide AMICH/MIC FL 105 - FL 245	Flight Plan Data and Estimates	EDWW FDA 5	34 2142
	Control Messages, Expedite Clearances, Approval Requests and Revisions	HEI P	34 2053
	Urgent Radar Coordination	HEI E	34 2043
Eider East ALS/GELTI/LECKY/ATTUS/ GND - FL 245	Flight Plan Data and Estimates	EDWW FDA 2	34 2123
	Control Messages, Expedite Clearances, Approval Requests and Revisions	EIDE P	34 2032
	Urgent Radar Coordination	EIDE E	34 2022
Eider West TUSKA GND - FL 245	Flight Plan Data and Estimates	EDWW FDA 2	34 2123
	Control Messages, Expedite Clearances, Approval Requests and Revisions	EIDW P	34 2031
	Urgent Radar Coordination	EIDW E	34 2021
VFR FIS Sectors FIS 1 west of 01200E FIS 3 east of 01200E	Flight Plan Data and other Coordination	FIS 1	34 2011
		FIS 3	34 2013

Supervisor: 34 2199
FMP: 34 2099
Data Assistant (AMC): 34 2119

Telefax: +49 421 53 55 33
E-mail: bremen.supervisor@dfs.de

C.2.2.2 Messages from Bremen ACC to ACC Copenhagen.

Receiving Sector/COPs	Message	Position	Extension
B SONAL/KOSEB/NIKDA/NEDIK/-AMICH GND - FL 285	Flight Plan Data and Estimates	FDA	35 1006
	Control Messages, Expedite Clearances, Approval Requests and Revisions	PLC-B	35 1009
	Urgent Radar Coordination	EC-B	35 1012
D ALS/GELTI/LECKY/ATTUS GND - FL 285	Flight Plan Data and Estimates	FDA	35 1006
	Control Messages, Expedite Clearances, Approval Requests and Revisions	PLC-D	35 1023
	Urgent Radar Coordination	EC-D	35 1021
I MIC GND - FL 285	Flight Plan Data and Estimates	FDA	35 1006
	Control Messages, Expedite Clearances, Approval Requests and Revisions	PLC-I	35 1013
	Urgent Radar Coordination	EC-I	35 1011
S TUSKA GND/FL 85 - FL 660 (above FL 85west of N873)	Flight Plan Data and Estimates	FDA for GAT	35 1006
		MDA for OAT	35 1074
	Control Messages, Expedite Clearances, Approval Requests and Revisions	PLC-S	35 1063
	Urgent Radar Coordination	EC-S	35 1061
Y TUSKA GND - FL 85 (west of N873)	Flight Plan Data and other Coordination	PLC-Y	35 1084

(continued from previous page)

VFR FIS Sectors		Flight Plan Data and other Coordination	PLC-Y	35 1084
GAT west of N873:	Sector Y		PLC COIF	35 1087
GAT on/east of N873:	COIF			
OAT:	DENMIL		PLC DENMIL	35 1073

Supervisor:	35 1000	Telefax:	+45 32 50 74 66
FMP/AMC:	35 1004	E-mail:	supa@naviair.dk

C.3 Failure of Ground/Ground Voice Communications.

C.3.1 Fall-Back Procedures for Coordination.

In the event of failure of the direct lines between the coordinating partners, coordination may be effected via:

a) public telephone:

ACC Copenhagen:	Switchboard:	+45 32 48 19 00
	Supervisor:	+45 32 48 19 33
	FMP:	+45 32 48 19 34
	Normally, calls to the sectors shall be made via the switchboard where the appropriate sector/working position is to be requested.	
Bremen ACC:	Sectors via Supervisor:	+49 421 5372 120
	Supervisor:	+49 421 5963 489

b) direct speech lines to UAC Maastricht/DFS UAC Maastricht or ACC Amsterdam.

C.3.2 Alternate Fall-Back Procedures for Coordination.

In case of communications failure where the alternatives described in para. C.3.1 are not available or practicable, pilots shall be instructed, at least 5 minutes prior to the transfer of control point, to pass flight data on the appropriate frequency of the accepting ATS-unit for the purpose of obtaining an ATC entry clearance from the accepting ATS-unit.

If the accepting ATS-unit cannot issue an entry clearance to the pilot upon his initial contact, the pilot shall be instructed to inform the transferring ATS-unit accordingly via RTF.

The transferring ATS-unit shall hold the aircraft within its AoR and after a minimum of 10 minutes instruct the pilot to re-establish RTF contact with the accepting ATS-unit.

This procedure shall be repeated until an onward clearance has been obtained from the accepting ATS-unit.

Appendix 1 to Annex C

Automatic Data Exchange.

ABI/PAC/ACT/LAM messages are exchanged between the ATS-units in accordance with the table below:

<table>
<tr><th rowspan="2">Messages</th><th rowspan="2">COPs</th><th colspan="2">Time and/or Distance Parameters</th></tr>
<tr><th>Messages from
ACC Copenhagen to
Bremen ACC</th><th>Messages from
Bremen ACC to
ACC Copenhagen</th></tr>
<tr><td>ABI

3 a+b
7 a+b+c
13 a
14 a+b+c
16 a
22: 9 a+b+c
80 and 81</td><td rowspan="3">see Annex
D para D.2</td><td>ACC Copenhagen will transmit ABI 30 minutes prior COP. If less than 30 minutes, ABI will be transmitted as soon as possible until 120 seconds before the ACT-transmission.

No ABI shall be transmitted when less than 120 seconds to the ACT-transmission.</td><td>Bremen ACC will transmit ABI upon activation of the flight in the Bremen ACC system.

No ABI shall be transmitted after ACT-transmission, or if the relevant flight is subject to PAC procedure..</td></tr>
<tr><td>PAC

3 a+b
7 a+b+c
13 a
14 a+b+c
16 a
22: 9 a+b+c
15 a+b+c
80 and 81
- see note</td><td>ACC Copenhagen does not transmit PAC to Bremen ACC.</td><td>Bremen ACC transmits PAC to ACC Copenhagen for departing aircraft from ETNS and EDHL minimum 2 minutes before departure.</td></tr>
<tr><td rowspan="2">ACT

3 a+b
7 a+b+c
13 a
14 a+b+c+d+e
16 a
22: 9 a+b+c
15 a+b+c
80 and 81
- see note</td><td>Traffic via MIC:
20 minutes or 40 NM prior COP, whichever comes first.

Other traffic:
15 minutes or 30 NM prior COP, whichever comes first.</td><td>Traffic via BANKU, RAMUX, NIKDA and ALS:
20 minutes or 30 NM prior COP, whichever comes first.

Other traffic:
15 minutes or 30 NM prior COP, whichever comes first.</td></tr>
<tr><td colspan="2">If less than 15/20 minutes, ACT shall be transmitted as soon as possible.</td></tr>
<tr><td>LAM</td><td>-</td><td>If a LAM is not received at the transferring unit within 15 seconds after the ACT-transmission, a warning shall be displayed at the appropriate sector.</td><td>If a LAM is not received at the transferring unit within 45 seconds after the ACT-transmission, a warning shall be displayed at the appropriate sector.</td></tr>
</table>

Note: For field types 14 d+e the following apply:

- field types 14d+e data will not be included in ACT-messages from ACC Copenhagen to Bremen ACC,
- field type 14d+e data included in ACT-messages from Bremen ACC to ACC Copenhagen will not be processed at ACC Copenhagen.

Field types 15 a+b+c shall not be included in messages from Bremen ACC to ACC Copenhagen.

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Annex D.

Procedures for Coordination.

Effective: 22.10.2009
Revised: 18.11.2010

D.1 General Conditions for Acceptance of Flights.

D.1.1 Coordination of flights shall take place by reference to the COP for the relevant route and in accordance with the appropriate levels specified for the relevant route (see paras D.2 and D.3).

Aircraft not equipped with 8.33 KHZ channel spacing capability shall not be coordinated above FL 195 except for UHF-equipped exempted State Aircraft.

D.1.2 Flights shall be considered to be maintaining the coordinated level at the transfer of control point unless climb or descent conditions have been clearly stated by verbal coordination or unless otherwise described in para. D.3.

D.1.3 If the accepting ATS-unit cannot accept a flight offered in accordance with the conditions specified above, it shall clearly indicate its inability and specify the conditions under which the flight will be accepted.

D.1.4 For any proposed deviation from the conditions specified in this Annex (eg. COP, route or level) the transferring ATS-unit shall initiate an Approval Request.

Unless otherwise coordinated, such a deviation shall be limited to the vertical and lateral extensions of the receiving sector of the accepting ATS-unit. The receiving sector of the accepting ATS-unit shall define responsibilities for further coordination.

D.1.5 The accepting ATS-unit shall not notify the transferring ATS-unit that it has established ground-air communications with the transferred aircraft unless specifically requested to do so. The accepting ATS-unit shall notify the transferring ATS-unit in the event that communication with the aircraft is not established as expected.

D.2 ATS-Routes, Coordination Points and Level Allocation.

Available ATS-routes, COPs to be used and level allocation to be applied, unless otherwise described in para. D.3, are described in the tables below.

D.2.1 **Flights from ACC Copenhagen to Bremen ACC.**

ATS-Route	COP	Level Allocation	Special Conditions - see para. D.3.1
(U)M602 / (U)M725	SONAL	odd FL's	-
Arriving aircraft to ETNL/ETNU via Q280	NEDIK		-
Arriving aircraft to EDBH via Q280			-
T503	MIC	all FL's	at/below FL 100: altn. route as coordinated by Bremen ACC - see text below
N850			
T504			
P615/M852	ALS		-
N872		even FL's FL 200 and above	-
P999		even FL's	CDR 2: FL 110 - FL 200
OAT via GELTI	GELTI		-
OAT via LECKY	LECKY	odd FL's	-
P992	ATTUS		CDR 2: FL 80 - FL 240 - see text below
N873	TUSKA	even FL's	-

The direct tracks in the table, including CDR's outside published hours, may be used without prior approval request.

Whenever requested by Bremen ACC, the following applies:

- aircraft via P992 shall be re-routed via ALS-P615 (e.g. due to military activity).
- aircraft via T503, N850 and T504 at/below FL 100 shall be re-routed east of MIC as specified by Bremen ACC (e.g. via UMKOM) for each individual aircraft (during military flying activities in ED R10B).

D.2.2 **Flights from Bremen ACC to ACC Copenhagen.**

ATS-Route	COP	Level Allocation	Special Conditions - see para. D.3.2
(U)M602 / (U)M725 Direct CDA (east of position ROSOK)	SONAL	even FL's	-
Arriving aircraft to EKCH via T299 Direct MONAK (east of position ROSOK)	KOSEB		-
Arriving aircraft to EKCH via T296 Direct MONAK (east of position ROSOK)	NIKDA		-
Departing aircraft from ETNL/ETNU/EDBH via Q280	NEDIK		-
P605	AMICH	all FL's	-
P615/M852	ALS		-
Arriving aircraft to EKBI via P615/M852 EKERN direct GELBA/LOKSA			-
P999			CDR 2: FL 110 - FL 200
OAT via GELTI	GELTI		-
OAT via LECKY	LECKY	even FL's	-
P992	ATTUS		CDR 2: FL 80 - FL 240
N873	TUSKA	odd FL's	-

The direct tracks in the table, including CDR's outside published hours, may be used without prior approval request.

D.3 Special Procedures.

D.3.1 **Flights from ACC Copenhagen to Bremen ACC.**

D.3.1.1 Traffic coordinated via MIC.

ACC Copenhagen shall ensure that traffic coordinated via MIC pass the AoR-boundary on or west of the track CDA - MIC.

Note: See para. D.2.1 regarding possible re-routeings of traffic at/below FL 100 during activation times of ED R10B.

D.3.1.2 Departing aircraft from EKCH/EKRK via SONAL.

Departing aircraft from EKCH/EKRK via SONAL shall be coordinated at FL190 or at cruising level, if lower.

D.3.1.3 Departing aircraft from Copenhagen FIR towards UAC Maastricht/DFS UAC Maastricht.

Departing aircraft from Copenhagen FIR towards UAC Maastricht/DFS UAC Maastricht but expected to be unable to pass the AoR-boundary at FL 250 or above, shall be coordinated with Bremen ACC at FL 240.

Note: Departing aircraft from EKCH with cruising level above FL 245 will be coordinated between ACC Copenhagen and UAC Maastricht.

D.3.1.4 Arriving aircraft to ETNL/ETNU/EDBH via NEDIK.

Arriving aircraft to ETNL/ETNU via NEDIK shall be coordinated at FL 150 or at cruising level, if lower.

If, after prior coordination with Bremen ACC, the aircraft will pass the AoR-boundary descending to the coordinated level, ACC Copenhagen shall ensure that the aircraft pass the AoR-boundary at FL 240 or below.

Arriving aircraft to EDBH via NEDIK shall be coordinated at FL 70 or at cruising level, if lower.

D.3.1.5 Arriving aircraft to EDDH, EDHI and EDHL.

Arriving aircraft to EDDH, EDHI and EDHL shall normally be coordinated at FL 230 or at cruising level, if lower.

ACC Copenhagen shall ensure that these aircraft pass the AoR-boundary at FL 240 or below - verbal coordination of descent to the coordinated level is not required.

ACC Copenhagen shall ensure that arriving aircraft via MIC pass the AoR-boundary on or west of the track CDA - MIC.

D.3.1.6 Arriving aircraft to ETNS and EDXF.

Arriving aircraft to ETNS and EDXF shall normally be coordinated at FL 70 or at cruising level, if lower.

ACC Copenhagen shall ensure that these aircraft pass the AoR-boundary at FL 100 or below - verbal coordination of descent to the coordinated level is not required.

D.3.2 **Flights from Bremen ACC to ACC Copenhagen.**

D.3.2.1 Departing aircraft from ETNL/ETNU/EDBH via NEDIK.

Departing aircraft from ETNL/ETNU/EDBH via NEDIK shall be coordinated at FL 140 or at cruising level, if lower.

D.3.2.2 Departing aircraft from EDDH.

Departing aircraft from EDDH shall be coordinated at FL 240 or at cruising level, if lower.

For climbing aircraft, verbal coordination of climb to the coordinated level is not required.

For aircraft with cruising level above FL 245, ACC Copenhagen is responsible for coordination of climb above FL 240 with UAC Maastricht.

Bremen ACC shall ensure that departing aircraft via GESKA pass the AoR-boundary on or east of the P605.

D.3.2.3 Departing aircraft from EDHL via (U)P605.

Departing aircraft from EDHL via (U)P605 shall be coordinated via AMICH at FL 240 or at cruising level, if lower.

Provided a PAC is transmitted to ACC Copenhagen, and an ACT is transmitted immediately after departure, there is no requirement for additional expedite clearance request or approval request for these aircraft.

For climbing aircraft, verbal coordination of climb to the coordinated level is not required.

D.3.2.4 Departing aircraft from ETNS and EDXF.

Departing aircraft from ETNS and EDXF shall be coordinated at FL 60 or at cruising level, if lower.

For these aircraft a PAC shall be transmitted to ACC Copenhagen, and an approval request/expedite clearance request shall be initiated after the PAC-transmission. ACT shall be transmitted as soon as possible after departure.

Note: For departing aircraft from EDXF, the PAC will be transmitted as soon as possible after departure (when the pilot has requested IFR-clearance from ACC Bremen via RTF).

For climbing aircraft, verbal coordination of climb to the coordinated level is not required.

D.3.2.5 Arriving aircraft to EKCH and EKRK from the Bremen ACC Mueritz sector.

Arriving aircraft to EKCH and EKRK from the Bremen ACC Mueritz sector shall be coordinated at FL 200 or at cruising level, if lower.

Bremen ACC shall ensure that descending aircraft will be able to reach FL 200 not later than:
a) to EKCH: 20 NM prior MONAK
b) to EKRK: 20 NM prior CDA.

For descending aircraft, verbal coordination of descent to the coordinated level is not required.

Unless otherwise coordinated by Bremen ACC for a specified aircraft (eg. due to traffic via Z14), the following apply for arriving aircraft to EKCH/EKRK from the Bremen ACC Mueritz sector:

a) the transfer of communications should take place at/before Release Line Rostock (see Annex B to this LoA).

b) these aircraft are - after passing Release Line Rostock (see Annex B to this LoA) and in respect of known traffic - released to ACC Copenhagen for:
   - turn in respect of other sectors at Bremen ACC and in respect of the ATCC Malmö AoR,
   - further descent and
   - change of speed.

D.3.2.6 Arriving aircraft to EKBI, EKEB, EKVJ, EKVD and EKSP from the Bremen ACC Eider West and Eider East sectors.

Arriving aircraft to EKBI, EKEB, EKVJ, EKVD and EKSP from the Bremen ACC Eider West and Eider East sectors shall be coordinated at FL 170 or at cruising level, if lower.

For descending aircraft, verbal coordination of descent to the coordinated level is not required.

Descending aircraft from UAC Maastricht shall generally pass the AoR-boundary at FL 240 or below with the following exceptions:

- if necessary due to an opposite climbing aircraft, Maastricht UAC may transfer a specified aircraft towards the ACC Copenhagen sector S to ACC Copenhagen descending to FL 270 after verbal coordination with ACC Copenhagen and ACC Bremen.
- if necessary due to military activity, aircraft towards the ACC Copenhagen sector D may pass the AoR-boundary above FL 245 after verbal coordination between UAC Maastricht and ACC Copenhagen and provided that UAC Maastricht ensures that such aircraft enter the Alsie Area (see Annex B to this LoA) at FL 280 or below.

D.3.2.7 Arriving aircraft to EKSB and EKPB from the Bremen ACC Eider East sector.

Arriving aircraft to EKSB and EKPB from the Bremen ACC Eider East sector shall be coordinated at FL 60 or at cruising level, if lower.

Wesentliches

When Bremen ACC issues a release for descent on such a flight, the relevant aircraft is released for descent to 3000 FT MSL unless otherwise coordinated.

D.3.2.8 Release for traffic from the Bremen ACC Mueritz sector towards ACC Copenhagen Sector B.

Unless otherwise coordinated by Bremen ACC for a specified aircraft (eg. due to traffic via Z14), traffic from the Bremen ACC Mueritz sector towards ACC Copenhagen Sector B is - after passing Release Line Rostock (see Annex B to this LoA) and in respect of known traffic, other sectors at Bremen ACC and Sweden FIR - released to ACC Copenhagen for turn.

D.3.3 **Off-route traffic.**

During hours of low military activity, ACC Copenhagen and Bremen ACC may agree on the use of certain direct tracks without COP-change and without individual Approval Requests provided that the traffic will pass the AoR-boundary at least 2,5 NM within the lateral limits of both the transferring Sector and the receiving Sector for the relevant COP.

Unless otherwise coordinated, such agreements are automatically suspended at 0600 UTC.

D.4 Coordination of Status of Special Areas in the Area of Common Interest.

Both ATS-units shall keep each other advised on any changes of the activation times of CDRs as promulgated in the CRAM and of activation times for the following CBAs, TSAs and AMC-manageable restricted or danger areas:

D.4.1 ACC Copenhagen shall inform Bremen ACC (Data Assistant [AMC]) about changes to the daily AUP-published activities for the following areas:

- EK R38, EK D371 and EK D373.

Note 1: ACC Copenhagen will inform DFS UAC Maastricht about such changes for the above areas.
DFS UAC Maastricht will inform UAC Maastricht about such changes for the above areas.

Note 2: AMC Denmark transmits the daily AUP to Bremen ACC via AMC Germany.

D.4.2 Bremen ACC shall inform ACC Copenhagen about changes to the daily AUP-published activities for the following areas:

- ED R10A-E, ED R11A/B, ED R12A/B, ED D19A/B, ED D28, ED D41A/B and ED D46.

Note 1: Bremen ACC will inform DFS UAC Maastricht about such changes for the above areas.
DFS UAC Maastricht will inform UAC Maastricht about such changes for the above areas.

Note 2: AMC Germany transmits the daily AUP to ACC Copenhagen (Supervisor) and to AMC Denmark.

Normally, ACC Copenhagen has no information about actual status of the following areas:

- ED R201, ED R206, ED R306, ED D44, ED D100, ED D101A/B, CBA SEA1 and the MVPA's Basic 1A-E/2A-E.

D.5 VFR-flights.

D.5.1 **Flights from ACC Copenhagen to Bremen ACC.**

D.5.1.1 VFR-flights at FL 100 and above.

For VFR-flights at FL 100 and above via the Schwerin North and Michaelsdorf Areas (airspace classification C), verbal coordination, transfer of control and transfer of communications shall take place as for IFR-flights.

Other VFR-flights at FL 100 and above shall be transferred to the appropriate control sector at Bremen ACC in due time, in order to obtain entry clearance.

D.5.1.2 VFR-flights below FL 100.

For VFR-flights at night at 2500 FT GND or above via the Michaelsdorf Area (airspace classification E), verbal coordination, transfer of control and transfer of communications shall take place as for IFR-flights.

Other VFR-flights below FL 100 shall be transferred to Bremen Information:

- FIS 1: west of 01200E, and
- FIS 3: east of 01200E.

D.5.2 **Flights from Bremen ACC to ACC Copenhagen.**

D.5.2.1 VFR-flights at FL 100 and above.

For VFR-flights FL 100 and above via the Schwerin North and Michaelsdorf Areas (airspace classification C), verbal coordination, transfer of control and transfer of communications shall take place as for IFR-flights.

Other VFR-flights FL 100 and above shall be transferred to:

- GAT west of N873: Sector Y (Copenhagen Information)
- GAT on/east of N873: COIF (Copenhagen Information)
- OAT: DENMIL.

D.5.2.2 VFR-flights below FL 100.

For VFR-flights at night at 2500 FT GND or above via the Michaelsdorf Area (airspace classification E), verbal coordination, transfer of control and transfer of communications shall take place as for IFR-flights.

Other VFR-flights below FL100 shall be transferred to:

- GAT west of N873: Sector Y (Copenhagen Information)
- GAT on/east of N873: COIF (Copenhagen Information)
- OAT: DENMIL.

D.5.3 **Special procedure for German VFR SAR helicopter-flights.**

German VFR SAR helicopter-flights intending to operate in Copenhagen FIR may operate on an abbreviated flight plan.

The operator/pilot in command shall submit the following flight plan information to ACC Copenhagen (COIF) either by telephone prior to departure or via RTF before passing the FIR-boundary:

a) callsign and type,
b) flight rules,
c) ADEP and destination (i.e. WGS 84-coordinates),
d) ETA for destination,
e) persons on board,
f) endurance.

When returning to Bremen FIR, the operator/pilot in command shall submit relevant FPL-information to Bremen ACC before passing the FIR-boundary.

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Annex E.

Transfer of Control and Transfer of Communications.

Effective: 22.10.2009
Revised: 18.11.2010, hand amendment 25.08.2011

E.1 Transfer of Control.

The transfer of control takes place at the AoR-boundary.

E.2 Transfer of Communications.

The transfer of communications shall take place before the transfer of control but not earlier than 30 NM before the AoR-boundary, unless otherwise coordinated or unless otherwise specified as a special procedure in Annex D to this LoA.

The relevant separation for the transfer of control shall be established before the transfer of communications.

The transferring Centre shall coordinate with the receiving Centre about which frequency (UHF or VHF) to be used in due time before the transfer of communications for the following traffic:

- UHF-equipped State Aircraft above FL 195 that are not equipped with 8.33 KHZ channel spacing capability, and
- UHF-equipped aircraft below FL 195 that are not equipped with VHF and for which a UHF frequency is not listed in the note below.

Note: Frequencies are:

	VHF		UHF
• ACC Copenhagen:			
Sector B:	119.550 MHZ		-
Sector D:	133.150 MHZ		-
Sector I:	121.375 MHZ		-
Sector S:	136.550 MHZ		-
Sector Y (Copenhagen Information):	124.000 MHZ	(west of N873)	-
COIF (Copenhagen Information):	129.475 MHZ	N873 - 01035E	-
	127.075 MHZ	east of 01035E	-
DENMIL:	129.825 MHZ		309.600 MHZ
• Bremen ACC:			
Sector Mueritz:	124.175 MHZ		259.825 MHZ
Hamburg East:	136.675 MHZ		357.550 MHZ
Heide:	125.850 MHZ		377.475 MHZ
Eider West:	120.225 MHZ		371.750 MHZ
Eider East:	124.075 MHZ		282.175 MHZ
FIS 1 (west of 01200E):	125.100 MHZ		340.600 MHZ
FIS 3 (east of 01200E):	132.650 MHZ		299.775 MHZ

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Annex F.

Radar Based Coordination Procedures.

Effective: 22.10.2009
Revised:

F.1 SSR Code Assignment.

F.1.1 The ATS-units shall transfer aircraft on verified discrete SSR codes assigned in accordance with ORCAM.

F.1.2 Any change of SSR code by the accepting ATS-unit may only take place after the transfer of control point.

F.1.3 The accepting ATS-unit shall be notified of any observed irregularity in the operation of SSR transponders.

F.2 Radar Coordination Procedures.

F.2.1 **General.**

F.2.1.1 Transfer of radar identification and transfer of radar control between ACC Copenhagen and Bremen ACC will be subject to the serviceability of the respective radar systems and two-way direct speech facilities between the radar positions.

F.2.1.2 If it becomes necessary to reduce or suspend radar transfers, a 5 minutes prior notification will be observed, except in emergency situations.

F.2.1.3 Vectoring within the respective AoR's may take place without coordination between the ATS-units, provided the distance to the AoR-boundary is never less than 2,5 NM.

F.2.2 **Transfer of Radar Control.**

Transfer of radar control may be effected after prior coordination provided the minimum distance between the aircraft does not fall below 5 NM.

Note: Between flights of aircraft type Airbus A380 (A388) at FL 100 or below and other aircraft operating directly behind, a separation of less than 10 NM may not always be accepted by Bremen ACC.

Between flights of aircraft type Boeing B757 and other aircraft operating directly behind, a separation of less than 6 NM may not always be accepted by Bremen ACC.

F.2.3 **Silent Transfer of Radar Control.**

Transfer of radar control may be effected without prior coordination provided the minimum distance between successive aircraft about to be transferred is 10 NM and constant or increasing.

Note: When using mach-number speed control, pilots concerned shall be instructed to report their assigned mach-number to the accepting ATS-unit upon initial contact.

F.3 Reduced Longitudinal Separation.

A minimum longitudinal separation of 3 minutes may be applied between aircraft on the same track or crossing tracks, whether at the same level, climbing or descending, provided that the relevant aircraft are continuously radar monitored and the transferring ATS-unit has ensured that the actual distance between the aircraft does not fall below 20 NM.

Annex G.

Fall-Back Operations and Contingency Arrangements.

Effective: 22.10.2009
Revised: 18.11.2011, hand amendment 25.08.2011

G.1 General.

G.1.1 Fall-Back Operations.

In case of system degradation affecting the provision of ATS (either in real operations or for training purposes), the Supervisor of the affected ATS-unit shall inform the Supervisor of the adjacent ATS-unit and specify the conditions under which ATS will be provided. If possible, the information shall include the expected duration of the relevant fall-back operations.

Special conditions may be:
- refusal of all or certain flights,
- refusal of certain traffic flows, or
- provisional acceptance of certain flights under specified conditions, eg. Radar Hand-over.

After recovery from fall-back operations, the Supervisor of the relevant ATS-unit shall inform the Supervisor of the adjacent ATS-unit of resumed standard operations.

G.1.2 Contingency Arrangements.

G.1.2.1 In case of technical outage or a catastrophic situation resulting in the disruption of the provision of ATS at ACC Copenhagen or at Bremen ACC, the adjacent coordinating partners are expected to assist the failing ATS-unit as far as possible in order to ensure the safe evacuation of air traffic from the AoR of the failing ATS-unit.

G.1.2.2 The Supervisor/CCP of the failing ATS-unit will decide about the required contingency measures and coordinate the subsequent execution of the contingency plan.

If traffic will be permitted to enter the AoR of the failing ATS-unit before the CCP has decided to re-establish the provision of ATS, this should be described in paras G.2 and G.3.

Furthermore, paras G.2 and G.3 should include relevant information from the respective contingency plans about:
- delegations of ATS to aiding ATS-units and/or,
- establishment of contingency sectors at aiding ATS-units.

G.2 ACC Copenhagen - Special Provisions.

G.2.1 **ACC Copenhagen Fall-Back Operations.**

G.2.1.1 The phrase: “ACC COPENHAGEN MAIN SYSTEM DOWN. REQUEST RADAR HAND-OVER, NO NEW ESTIMATES ACCEPTED UFN” will be used to signify that flights that were co-ordinated before the Main System Failure will be accepted by ACC Copenhagen, and that those flights require a Radar Hand-over.

Flights that have not been co-ordinated before the Main System Failure will not be accepted, nor will any estimate be accepted until further notice.

This measure will allow ACC Copenhagen to initiate the relevant Fall-Back Scenario and could last up to 5 minutes.

G.2.1.2 The phrase: “ACC COPENHAGEN FALL-BACK OPERATIONS. VERBAL ESTIMATES ONLY, MINUMUM SEPARATION OF 3 MINUTES/20 NM ["FOR TRAFFIC AT SAME LEVEL” or "FOR ALL TRAFFIC REGARDLESS OF LEVEL"], RADAR HAND-OVER REQUIRED FOR ALL TRAFFIC. will be used to signify that ACC Copenhagen is operating in Fall-Back Mode under the following conditions:

- The ACC Copenhagen Supervisor will inform adjacent ATS-units which flights or traffic flows will be accepted,
- All flights to/from ACC Copenhagen are subject to verbal exchange of estimates,
- For traffic towards ACC Copenhagen the separation shall be based on Reduced Longitudinal Separation (see Annex F to this LoA) as coordinated - either between traffic at the same level or between all traffic regardless of level (depending on the fall-back scenario).
- All flights towards ACC Copenhagen are subject to an additional Approval Request, and a Radar Hand-over shall be initiated before the transfer of communications.

Note: The acceptance of a verbal estimate by ACC Copenhagen does not imply the approval of the respective flight.

G.2.1.3 When system activities planned by ACC Copenhagen will affect the automatic data exchange messages or other agreed procedures, the program of such activities, including relevant Fall-Back procedures (if applicable), will be published by the ACC Copenhagen Systems Division to the adjacent ATS-units in due time. This pre-notification shall be transmitted to Bremen ACC via e-mail to the following recipients:

- tb.bremen@dfs.de
- axel.brandt@dfs.de
- michael.hensel@dfs.de
- michael.gellermann@dfs.de

Before the planned activities start, the ACC Copenhagen Supervisor will coordinate relevant Fall-Back procedures with the Bremen ACC Supervisor via telephone.

G.2.2 **ACC Copenhagen Contingency Arrangements.**

G.2.2.1 Purpose.

This chapter defines procedures to be applied in a state of emergency when ACC Copenhagen has to shut down the main OPS-room, and where operations will be resumed in the ACC Copenhagen Test and Training Room or from a contingency location to be decided by the ACC Copenhagen CCP.

In case of contingency, the regulations of this chapter take precedence over the respective provisions of Annexes A to F to this LoA.

G.2.2.2 Contingency Phase 0 - Immediate Actions.

G.2.2.2.1 When the operational status of ACC Copenhagen becomes impaired to such an extent that ATS can no longer be provided, the ACC Copenhagen Supervisor will act as initial CCP for ACC Copenhagen and notify adjacent ATS-units, the CFMU and aiding ATS-units about the state of emergency with the following phrase:

- "ACC COPENHAGEN EVACUATING. NO TRAFFIC ACCEPTED".

Notification of adjacent ATS-units will take place with the assistance of the adjacent ATS-units as follows:

- the ACC Copenhagen Supervisor informs UAC Maastricht, ACC Scottish and ATCC Malmö,
  - UAC Maastricht will be requested to inform DFS UAC Maastricht, UAC Karlsruhe and AOCS Nieuw Milligen ATC,
  - ACC Scottish will be requested to inform Mil ATCC Scottish, Mil ATCC London, ACC Amsterdam and ATCC Stavanger, and
  - ATCC Malmö will be requested to inform ATC Göteborg, Bremen ACC and ATCC Oslo.

From this time on until further notice, the following apply:

- the AoR of ACC Copenhagen shall be called the ACC Copenhagen Contingency Area (CA),
- the CA is a No-Fly-Zone, entry is prohibited.

G.2.2.2.2 The ACC Copenhagen CCP will be established.

Adjacent ATS-units will be informed about relevant telephone numbers to the ACC Copenhagen CCP as soon as possible.

G.2.2.3 Contingency Phase 1 - Temporary Provisions.

In order to allow a very limited traffic flow in the ACC Copenhagen CA untill ACC Copenhagen is able to re-establish the provision of ATS - either with the establishment of re-located contingency sectors or with the return to the ACC Copenhagen OPS-room - the ACC Copenhagen CCP may decide to establish Temporary Contingency Procedures.

Temporary Contingency Procedures relevant for Bremen ACC are as follows:

a) temporary ATS-delegations to aiding ATS-units, eg.:
   - ATS-delegations below FL 245 to local ATS-units.

b) temporary procedures below FL 245 for domestic traffic and for specified flights towards/from Bremen FIR (via ALS/TUSKA).

   Note: Non-domestic traffic to/from EKCH/EKRK will not be included in such Temporary Contingency Procedures.These flights shall avoid the ACC Copenhagen CA and route via STAR's/SIDS's from/towards Sweden FIR.

The introduction of Temporary Contingency Procedures will require the following actions by the ACC Copenhagen CCP:

- detailed coordination with affected adjacent ATS-units - eg. procedures for coordination, relevant telephone numbers and FRQ's,
- detailed coordination with the CFMU, eg. definition of traffic volumes and implementation of relevant CFMU-regulations,
- detailed NOTAM-publication of ATS-delegations and accepted traffic (flows and levels).

G.2.2.4 Contingency Phase 2 - Establishment of Contingency Sectors.

ACC Copenhagen may re-establish the provision of ATS within its AoR by opening contingency sectors locally in the ACC Copenhagen Test and Training Room.

Unless otherwise co-ordinated by the ACC Copenhagen CCP, the contingency sectors will correspond to existing sectors at ACC Copenhagen and normal co-ordination procedures will apply.

The ACC Copenhagen CCP will coordinate the suspension of relevant Temporary Contingency Procedures and the activation of the contingency sectors with adjacent ATS-units, aiding ATS-units and the CFMU.

G.3 Bremen ACC - Special Provisions.

G.3.1 **Bremen ACC Fall-Back Operations.**

When system activities planned by Bremen ACC will affect the automatic data exchange messages or other agreed procedures, the program of such activities, including relevant Fall-Back procedures (if applicable), will be published by the Bremen ACC Systems Division to the adjacent ATS-units in due time. This pre-notification shall be transmitted to ACC Copenhagen via e-mail to the following recipients:

- update@naviair.dk

Before the planned activities start, the Bremen ACC Supervisor will coordinate relevant Fall-Back procedures with the ACC Copenhagen Supervisor via telephone.

G.3.2 **Bremen ACC Contingency Arrangements.**

G.3.2.1 Purpose.

This chapter defines procedures to be applied in a state of emergency when Bremen ACC has to be shut down and operations shall be resumed at aiding units with control staff relocated from Bremen ACC.

In case of contingency, the regulations of this chapter take precedence over the respective provisions of Annexes A to F to this LoA.

G.3.2.2 Contingency Phase 0.

G.3.2.2.1 In case of an incident which requires to cease the operations or causes a sudden loss of Bremen ACC, the Bremen ACC Supervisor shall notify the ACC Copenhagen Supervisor on that as far as possible.

If necessary and possible, measures shall be agreed in order to ensure the safe evacuation of all controlled air traffic from the Bremen ACC AoR.

When the operations of Bremen ACC are ceased and the Bremen ACC AoR is vacated from any controlled traffic, the Supervisor in charge of operations shall declare contingency phase 0 for Bremen ACC. From this time on:

- the Bremen ACC AoR shall be called the Bremen ACC Contingency Area until full serviceability of Bremen ACC is recovered,
- the Bremen ACC Contingency Area is a No-Fly-Zone, entry is prohibited until contingency phase 1 or 2 are activated.

G.3.2.2.2 Communications - Emergency Operations Staff Bremen ACC:

- ATC Supervisor: +49 421 596 3489 or +49 173 3401129

G.3.2.3 Contingency Phase 1.

After declaration of contingency phase 0 until activation of contingency phase 2 flights through the Bremen ACC Contingency Area may be conducted on a conflict free level allocation scheme. This period is called contingency phase 1.

Note: This contingency phase is of no concern to ACC Copenhagen.

G.3.2.4 Contingency Phase 2.

G.3.2.4.1 General.

In contingency phase 2 Bremen ACC re-establishes the provision of ATS within its AoR by opening contingency sectors at aiding units.

The contingency sectors will correspond to existing sectors at Bremen ACC and normal coordination procedures will apply unless otherwise coordinated by the CCP:

Wesentliches

- Müritz sector: Contingency sector East 1 at CRC Schönewalde
- Hamburg East: Contingency sector North Low at TWR Hamburg
- Heide sector: Contingency sector North High at UAC Maastricht
- Eider West sector: Contingency sector North/West at UAC Maastricht
- Eider East sector: Contingency sector North/West at UAC Maastricht.

G.3.2.4.2 Activation/Deactivation.

Bremen ACC Chief of Emergency Operations Staff shall inform the ACC Copenhagen Supervisor about the activation of the contingency sectors.

G.3.2.4.3 ATFM-Procedures.

Necessary ATFM-measures to be applied during contingency phase 2 will be initiated by the Bremen ACC Supervisor.

G.3.2.4.4 Contingency sectors and Communications.

Contingency Sector (Aiding Unit)	Message	Position	Communications (Telephone and RTF)
Contingency Bremen East 1 (CRC Schönewalde)	Flight Plan Data and Estimates	CB E1 FDA	MFC: 34 7795 Public: +49 3538 9863 3797
	Control Messages, Expedite Clearances, Approval Requests and Revisions	CB E1 P	MFC: 34 7793 Public: +49 3538 9863 3798
	Urgent Radar Coordination	CB E1 E	MFC: 34 7794 Public: +49 3538 9863 3799 RTF: 134.650 MHZ (VHF) 373.975 MHZ (UHF)
Contingency Bremen North LOW (Tower Hamburg)	Flight Plan Data and Estimate, Control Messages, Expedite Clearances, Approval Requests and Revisions	CB NL P	MFC: 34 2499 Public: +49 40 596564
	Urgent Radar Coordination	CB NL E	MFC: via CB NL P Public: via CB NL P RTF: 136.675 MHZ (VHF) 278.450 MHZ (UHF)

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Contingency Bremen North HIGH (UAC Maastricht)	Flight Plan Data and Estimate	CB NH/N/W FDA	MFC: 34 4924 Public: +31 4336 625 23
	Control Messages, Expedite Clearances, Approval Requests and Revisions	CB NH P	MFC: 34 4926 Public: +31 4336 625 18
	Urgent Radar Coordination	CB NH E	MFC: 34 4925 Public: +31 4336 625 19 RTF: 127.675 MHZ (VHF)
Contingency Bremen North/West (UAC Maastricht)	Flight Plan Data and Estimate	CB-NH/N/W FDA	MFC: 34 4924 Public: +31 4336 625 23
	Control Messages, Expedite Clearances, Approval Requests and Revisions	CB N/W P	MFC: 34 4921 Public: +31 4336 625 16
	Urgent Radar Coordination	CB N/W E	MFC: 34 4920 Public: +31 4336 625 17 RTF: 120.225 MHZ (VHF)

Contingency Supervisor (UAC Maastricht): MFC: 34 4923 Public: +31 4336 625 22

The Bremen ACC contingency working positions will call the respective working position of ACC Copenhagen on the extensions agreed in Annex C to this LoA.

G.3.2.4.5 Exchange of Flight Data.

Basic flight plan data are available at the contingency working positions only to some extent.

Since OLDI-data exchange with the contingency working positions is not possible, all estimates shall be coordinated by telephone. The pre-notification time of estimates shall be 30 - 15 minutes before the aircraft is estimated to pass the AoR-boundary.

An expedite clearance shall be obtained by the transferring ATS-unit when:
- the estimate cannot be passed at least 15 minutes before the aircraft is estimated to pass the AoR-boundary,
- a change of coordinated flight level has to be executed within 5 minutes prior to crossing the AoR-boundary.

G.3.2.4.6 Control Procedures.

Deviations from published ATS-routes shall be coordinated only to prevent dangerous situations or in case of emergencies.

The following separation minima apply:
- with verbal coordination: 15 NM constant or increasing,
- without verbal coordination: reduced longitudinal separation as described in Annex F to this LoA.

G.3.3 **SSR-code Assignment at Bremen ACC during Fall-Back and/or Contingency Operations.**

During Fall-Back and/or Contingency Operations, Bremen ACC may not be able to transfer aircraft on discrete SSR-codes assigned in accordance with ORCAM.

G.4 Special Arrangements.

ACC Copenhagen acts as aiding ATS-unit for ATCC Malmö and in case of disruption of the provision of ATS at ATCC Malmö, ATCC Malmö may establish contingency sectors at ACC Copenhagen.