to	Distribution list				**LoA 05**
from	S. Borchert, CC/FB-N	phone	0421 5372 180	date DRF until	11.11.2011 29.12.2011

Amendment of the LoA between Munich ACC and Bremen ACC wef 17.11.2011

1. Essentials

Annex D — SASH or SASL shall issue the inbound clearance to arrivals EDDT, EDDB via T203 / AKUDI-STAR and may clear acft DCT ATGUP in case of W-RWYs or DCT KLF in case of E-RWYs at Berlin, unless otherwise requested by Bremen ACC.

Annex G — Change of the Bremen Contingency MFC-numbers at CRC Schönewalde.

2. List of Changes

Date	Parts	Page(s)	add, replace, delete
17.11.2011	amendment LoA	all	replace

Axel Brandt
Chief of Support

Jun Kurokoshi
Chief of Section

Sector families affected:												
	North A*)	North B*)	East A*	East B*	South	FDS	FIS	FMP	DA	SV CC	SV FDS	office
mandatory	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
information	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑
* only applicable to sector(s):												
This LoA is valid for:												
	North A*)	North B*)	East A	East B	South	FDS	FIS	FMP	DA	SV CC	SV FDS	office
	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
* only applicable to sector(s):												

Distribution list:
LoA I
Ms. K. Fröhlich
Mr. M. König
Mr. M. Funke
Mr. S. Kiekhöfer
Mr. U. Voigt
Ms. G. Tröger
Ms. C. Heise

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LETTER OF AGREEMENT

between

DFS Deutsche Flugsicherung GmbH **Branch South, Center Munich** **Munich ACC**	**and**	**DFS Deutsche Flugsicherung GmbH** **Branch North** **Bremen ACC**

Effective: 2009-06-04

1 General.

1.1 Purpose.

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

Both parties 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 LoA.

2 Areas of Responsibility (AoRs) and Delegation of the Responsibility for the Provision of ATS.

2.1 Areas of Responsibility.

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

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

2.1.1 Munich ACC.

Lateral limits: as described in AIP Germany

Vertical limits: as described in AIP Germany

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

2.1.2 Bremen ACC.

Lateral limits: as described in AIP Germany

Vertical limits: as described in AIP Germany

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

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

2.2.1 Delegation of ATS from Munich ACC to Bremen ACC.

Not applicable.

2.2.2 Delegation of ATS from Bremen ACC to Munich ACC.

Not applicable.

2.2.3 Other Areas.

Delegations of ATS to/from other coordinating air traffic services units along the common boundary of the AoRs are described in Annex B to this LoA.

2.2.4 Delegated services.

The provision of ATS in respect of this LoA means the following services:
Air Traffic Control Service (ATC), Flight Information Service (FIS) for controlled flights and Alerting Service (ALRS).

3 Procedures.

Procedures to be applied are detailed in the Annexes to this LoA:

Annex A	Definitions and Abbreviations
Annex B	Area of Common Interest
Annex C	Flight Data Exchange
Annex D	Control and Coordination Procedures
Annex E	Transfers of Control and Transfer of Communication
Annex F	Radar Based Coordination Procedures and ATFCM
Annex G	Supplementary Procedures/Contingency
Annex H	Monitoring and coordination of flights in the Night Low Flying System (NLFS GE)

4 Revisions and Deviations.

4.1 **Revision of the LoA.**

The revision of the present LoA, excluding Annexes, requires the mutual written consent of the parties.

4.2 **Revision of the Annexes to the LoA.**

The revision of Annexes to the present LoA requires the mutual written consent of the parties and the written confirmation of the mutual consent of one of both parties at least.

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 LoA.

4.4 **Incidental Deviations.**

Instances may arise where incidental deviations from the procedures specified in the Annexes to this LoA 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 LoA by mutual written agreement of the respective parties may take place at any time.

5.2 Cancellation of this LoA by either party is possible at any time, provided that the cancelling party declares its intention to cancel the LoA with a minimum pre-notification time of 3 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 LoA becomes effective 04 June 2009 and supersedes the LoA between Munich ACC and Bremen ACC dated 07 June 2007.

Munich, [date]

.....
i. V. Manuel Seibel
Spokesman and Head of Operations
Munich ACC

Bremen, [date]

.....
i. V. Werner Spier
Spokesman and Head of Operations
Bremen ACC

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Appendix 1.

Record of Amendments.

AMD No.	Date	Part/Annex	Page(s)	add, delete or replace
1	2009-07-02	Appendix 1	1	replace
		Annex B	B1, B3, B5 - B7	replace
		Annex D	D1, D3	replace
2	2009-07-30	Appendix 1	1	replace
		Annex A	A1, A2	replace
		Annex C	C1, C3, C4	replace
		Annex D	D1 - D4, D6	replace
3	2009-09-24	Appendix 1	1	replace
		Annex C	C1, C3	replace
4	2009-11-19	Appendix 1	1	replace
		Annex B	B1. B2, B4 – B7	replace
		Annex D	D1, D3 – D7	replace
		Annex E	E1	replace
		Annex F	F1	replace
		Annex G	G1, G4	replace
5	2010-02-11	Appendix 1	1	replace
		Annex C	C1, C5	replace
		Annex D	D1, D5	replace
		Annex G	G1, G3, G4	replace
6	2010-04-08	Appendix 1	1	replace
		Annex D	D1 – D3, D6	replace
		Annex E	E1	replace
		Annex G	G1 – G4,	replace
7	2010-07-01	Appendix 1	1	replace
		Annex D	D1, D5, D6	replace
8	2010-07-29	Appendix 1	1	replace
		Annex C	C1, C5	replace
9	2010-08-26	Appendix 1	1	replace
		Annex B	B1, B4	replace
		Annex D	D1, D6	replace
10	2010-12-16	Appendix 1	1	replace
		Annex A	A1, A2	replace
		Annex B	B1, B4	replace
		Annex F	F1	replace
		Annex G	G1 – G4	replace
11	2011-02-10	Appendix 1	1	replace
		Annex D	D1-D3	replace
		Annex G	G1, G3	replace
12	2011-03-10	Appendix 1	1	replace
		Annex D	D1, D2	replace
		Annex E	E1	replace
13	2011-06-02	Appendix 1	1	replace
		Annex D	D1, D5, D6	replace
14	2011-07-28	Appendix 1	1	replace
		Annex B	B1, B4 – B7	replace
		Annex D	D1, D8	replace
		Annex G	G1, G6	replace
15	2011-08-25	Appendix 1	1	replace
		Annex D	D1, D3 – D7	replace
16	**2011-11-17**	**Appendix 1**	**1 – 2**	**replace**
		Annex D	**D1, D4**	**replace**
		Annex G	**G1, G3**	**replace**

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Annex A.

Definitions and Abbreviations.

Effective: 2009-06-04
Revised: 2010-12-16

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 AoRs, within which airspace structure and related activities may have an impact on air traffic coordination procedures.

A.1.3 **Division Level.**

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

A.1.4 **Release.**

A.1.4.1 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 AoR unless otherwise agreed.

A.1.4.2 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 AoR unless otherwise agreed.

A.1.4.3 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° before the transfer of control.

Note: The transferring unit remains responsible for separation within its AoR unless otherwise agreed.

A.1.5 **General Air Traffic.**

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

A.1.6 **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.1.7 **State Aircraft.**

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

A.2 Abbreviations.

ABI*	Advanced Boundary Information (OLDI)
ACC	Area Control Center
ACI*	Area of Common Interest
ACT*	Activation Message (OLDI)
AIP	Aeronautical Information Publication
AoR*	Area of Responsibility
ARR	Arrival
ATC	Air Traffic Control
ATS	Air Traffic Services
BORE/P*	Center Bremen Boerde Executive/Planner
CA*	Contingency Area
CBEA*	Contingency Bremen East Approach
CBES*	Contingency Bremen East South
CBSH*	Contingency Bremen South High
CCP*	Contingency Contact Point
COP*	Coordination Point
COS*	Chief of Section
CRC*	Control and Reporting Center
CTA	Control Area
DBASB/Q*	Center Bremen Berlin Arrival South Executive/Planner
DEP	Departure
DEST*	Destination
DL*	Division Level
ETO	Estimated Time over significant Point
FDA*	Flight Data Assistant
FDS*	Flight Data Specialist
FIC	Flight Information Centre
FIR	Flight Information Region
FIS	Flight Information Service
FLGE/P*	Center Bremen Fläming Executive/Planner
FMP*	Flow Management Position
GAT*	General Air Traffic
GND	Ground
HRZE/P*	Center Bremen Harz Executive/Planner
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ISIS*	Improved Speech Integrated System
LAM*	Logical Acknowledge Message (OLDI)
LoA*	Letter of Agreement
MFC*	Multi Frequency Coding (telephone system)
MMCF*	Center Munich Flow Management Position
MMCAM*	Center Munich Center Supervisor FDA
MMCM*	Center Munich Center Supervisor
MMC2I*	Center Munich FIS (Nord)
NLFS GE*	Night Low Flying System Germany
NM	Nautical Mile
OAT*	Operational Air Traffic
OLDI*	On-line Data Interchange
ORCAM	Originating Region Code Assignment Method
PAC*	Pre-activation Message (OLDI)
PSN*	Packet Switched Network
RFL*	Requested Flight Level
RTF	Radio Telephony
RVSM	Reduced Vertical Separation Minimum
SASHE/P*	Center Munich Sachsen High Executive/Planner
SASLB/Q*	Center Munich Sachsen Low Executive/Planner
SFL*	Supplementary Flight Level
SSR	Secondary Surveillance Radar
SV*	Supervisor
TRGA	Center Munich Thüringen Assistant
TRGHNE/P*	Center Munich Thüringen High North Executive/Planner
TRGHSE/P*	Center Munich Thüringen High South Executive/Planner
TRGLB/Q*	Center Munich Thüringen Low Executive/Planner
TFC	Traffic
UAC	Upper Area Control Center
UIR	Upper Flight Information Region
VFR	Visual Flight Rules
XFL*	Exit FL (P1)
WWC1(3, 4)A*	Center Bremen Assistant 1 (3, 4)
WWC1D*	Center Bremen Data Assistant
WWC1F*	Center Bremen FMP
WWC1M*	Center Bremen Supervisor ATC
WWC1S*	Center Bremen TRAMON 202
WWC2(3)I*	Center Bremen FIS 2(3)
WWC3S*	Center Bremen TRAMON 206

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

For further abbreviations and definitions see DFS Manual of Operations Air Traffic Services or AIP GEN

Annex B.

Area of Common Interest.

Effective: 2009-06-04
Revised: 2011-07-28

B.1 Airspace Structure and Classification within the ACI.

Area	Vertical limits	Airspace Classification
Rhein UIR	FL245 – UNL	C (FL245 – FL660)
Munich/Bremen FIR	FL100 – FL245 2500 GND - FL100 GND - below 2500 GND	C E G
Deviations:		
Leipzig (see Enroute Chart)	GND – 2500 MSL 2500/3500/4500/5500 MSL – FL75 1000 GND - 2500 GND GND - 1000 GND	D D (no CTR) E G
Dresden (see Enroute Chart)	GND –2500 MSL 2500/3500 MSL - FL60 1000 GND - 2500 GND GND - 1000 GND	D D (no CTR) E G
Magdeburg (see Enroute Chart)	GND –2500 GND	F
Magdeburg/Cochstedt (see Enroute Chart)	GND –3000 MSL 1000 GND - 2500 GND GND - 1000 GND	D E G
Holzdorf (see Enroute Chart)	GND –2800 MSL 1000/1700 GND - 2500 GND GND - 1000/1700 GND	D E G

B.2 Sectorization.

B.2.1 **Coordinates of the Sector Boundaries** as shown in Appendix 1 to Annex B chart 1 and 2

1	N 51 20 02 E 010 23 15	1a	N 51 20 00 E 010 29 34
1b	N 51 20 01 E 010 03 34	2	N 51 29 13 E 010 35 33
3	N 51 34 00 E 010 42 00	4	N 51 50 28 E 011 12 30
4a	N 51 54 23 E 011 07 48	5	N 51 43 17 E 011 24 26
6	N 51 47 52 E 012 20 23	6a	N 51 59 36 E 012 29 39
7	N 51 30 30 E 013 06 00	8	N 51 30 30 E 013 14 55
8a	N 50 36 37 E 012 18 52	9	N 51 30 30 E 013 45 00
9a	N 51 53 50 E 013 45 00	10	N 51 41 55 E 014 42 52
11	N 51 27 26 E 012 49 37	12	N 51 31 40 E 012 40 09
12a	N 50 50 54 E 010 38 39	13	N 51 35 34 E 012 31 23
14	N 51 46 49 E 012 15 39	15	N 51 55 59 E 011 37 30
18	N 51 40 15 E 011 09 05	19	N 51 43 16 E 010 59 05
19a	N 51 54 24 E 010 59 00	20	N 51 36 14 E 012 51 05
21	N 52 08 42 E 014 27 56	22	N 52 08 19 E 014 40 36

B.3 Special Areas within the ACI.

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

B.3.1.1 Within the **Rhein UIR** the responsibility for the provision of ATS in accordance with the airspace classification has been delegated from Bremen ACC to Maastricht UAC (for GAT) and to Maastricht UAC/DFS (for OAT) within the:

RISOK LOW Area (see Appendix 2 to Annex B chart 1)

Lateral limits: N 51 48 23 E 011 08 38 - N 51 50 28 E 011 12 30 - N 51 54 23 E 011 07 48 - N 51 48 23 E 011 08 38.

Vertical extension: FL245 - FL285

Airspace classification: C

B.3.1.2 Within the **Hannover UIR** the responsibility for the provision of ATS in accordance with the airspace classification has been delegated from Maastricht UAC (for GAT) and Maastricht UAC/DFS (for OAT) to Munich ACC within the:

ABGUS LOW Area (see Appendix 2 to Annex B chart 1)

Lateral limits: N 51 34 00 E 010 42 00 - N 51 45 30 E 011 08 45 - N 51 48 23 E 011 08 38 - N 51 34 00 E 010 42 00.

Vertical extension: FL245 - FL315

Airspace classification: C

B.3.1.3 Within the **Warszawa FIR** the responsibility for the provision of ATS in accordance with the ICAO airspace classification has been delegated from Warszawa ACC to Bremen ACC within the following areas:

Cottbus Drewitz CTA (see Appendix 2 to Annex B chart 2)

Lateral limits:	N 52 04 09 E 014 45 36 – N 52 04 35 E 014 58 20 - N 51 50 33 E 015 00 27 – N 51 45 31 E 014 39 47 - Polish/German state border – N 52 04 09 E 014 45 36.
Vertical extension:	2500 GND - FL085.
Airspace classification:	E

Cottbus Drewitz Airspace class F (see Appendix 2 to Annex B chart 2)

Lateral limits:	N 52 00 24 E 014 43 22 - then a circle segment with a radius of 10 NM around the ARP (N 51 53 21 E 014 31 55) - N 51 50 43 E 014 47 29 – N 51 48 11 E 014 37 06 - Polish/German state border – N 52 00 24 E 014 43 22.
Vertical limits:	1500 GND - 2500 GND.
and	
Lateral limits:	N 51 55 57 E 014 42 25 - N 51 53 08 E 014 44 13 - N 51 51 17 E 014 36 38 - Polish/German state border - N 51 55 57 E 014 42 25.
Vertical limits:	GND - 1500 GND.
Airspace classification:	F

B.3.1.4 Within the **Bremen FIR** the responsibility for the provision of ATS has been delegated from Bremen ACC to Langen ACC within the following area:

RIMET Area (see Appendix 2 to Annex B chart 1)

Lateral Limits:	N 51 28 42 E 010 03 42 - N 51 29 13 E 010 35 33 - N 51 20 02 E 010 23 15 - N 51 20 01 E 010 03 34 - N 51 28 42 E 010 03 42.
Vertical Limits:	FL235 up to FL245
Airspace classification:	C

B.3.2 **Other Areas.**

B.3.2.1 Holzdorf AoR (temporary) (see Appendix 2 to Annex B chart 2)

Within the Bremen FIR Holzdorf APP will be responsible for the provision of ATS, when active within the following area:

Holzdorf AoR

Lateral limits:	N 51 59 36 E 012 29 39 - N 51 49 55 E 013 45 00 - N 51 30 30 E 013 45 00 - N 51 30 30 E 013 06 00 - N 51 47 52 E 012 20 23 - N 51 59 36 E 012 29 39 .
Vertical extension:	GND – 5500 MSL.
Airspace classification:	see para B.1.

B.3.2.2 ED-R 70 (Holzdorf), ED-R 73 (Altengrabow), ED-R 76 (Oberlausitz), ED-R 208 (208A/208B)/308 (TRA Sachsen 1/2) as published in the AIP Germany.

B.3.2.3 Within the Bremen FIR Bremen ACC Sector DBAS may release the TORGAU area to Munich ACC sector TRGL, if RWY-direction 26 is in use at Leipzig airport.

Within the TORGAU area Arrivals EDDP are released for turn and descent from Bremen ACC DBAS to Munich ACC TRGL.

Bremen ACC DBAS shall inform Munich ACC TRGL about all other Traffic within the TORGAU area or if the minimum distance to the TORGAU area is less than 3NM.

Torgau area:	see Appendix 1 to Annex B chart 2
Lateral limits:	(20) N 51 36 14 E 012 51 05 – (23) N 51 37 13 E013 07 34 – (8) N 51 30 30 E 013 14 55 – (7) N 51 30 30 E 013 06 00 – (20) N 51 36 14 E 012 51 05
Vertical limits:	GND – FL135

Note: If Holzdorf AoR is activated, the lower limit shall be 5500 MSL

Airspace classification:	see para B.1.

B.3.2.4 Within the Munich FIR Munich ACC Sektor TRGL may release the MULDE area to Bremen ACC sector FLG, if RWY-direction EAST is in use at Berlin airports.

Within the MULDE area Arrivals EDDT and EDDB are released for turn and descent from Munich ACC TRGL to Bremen ACC FLG.

Munich ACC TRGL and SASL shall inform Bremen ACC FLG about all other Traffic within the MULDE area or if the minimum distance to the MULDE area is less than 3 NM resp 5NM if ASR Leipzig is not working.

MULDE area A:	see Appendix 1 and 2 to Annex B
Lateral limits:	(6) N 51 47 52 E 012 20 23 - (20) N 51 36 14 E 012 51 05 - (7) N 51 30 30 E 013 06 00 - (8) N 51 30 30 E 013 14 55 - (24) N 51 26 29 E 013 10 39 - (11) N 51 27 26 E 012 49 37 - (12) N 51 31 40 E 012 40 09 - (13) N 51 35 34 E 012 31 23 - (14) N 51 46 49 E 012 15 39 - (6) N 51 47 52 E 012 20 23
Vertical limits:	FL135 - FL165/FL195
Airspace classification:	see para B.1.

MULDE area B:	see Appendix 1 and 2 to Annex B
Lateral limits:	(14) N 51 46 49 E 012 15 39 - (13) N 51 35 34 E 012 31 23 - (12) N 51 31 40 E 012 40 09 - (11) N 51 27 26 E 012 49 37 - (17) N 51 28 16 E 012 29 38 - (16) N 51 46 10 E 012 05 53 - (14) N 51 46 49 E 012 15 39
Vertical limits:	FL165 - FL195
Airspace classification:	see para B.1.

B.4 Non-published Co-ordination Points.

COPs that are not related to significant points published in relevant AIP.

XMAG (between MATIP and PENEM on MAG-SIDs EDDP) N 51 42 55 E 012 01 09

Appendix 1 to Annex B

Chart 1 Sectorisation close to the AOR boundary of Munich and Bremen ACC, western part.

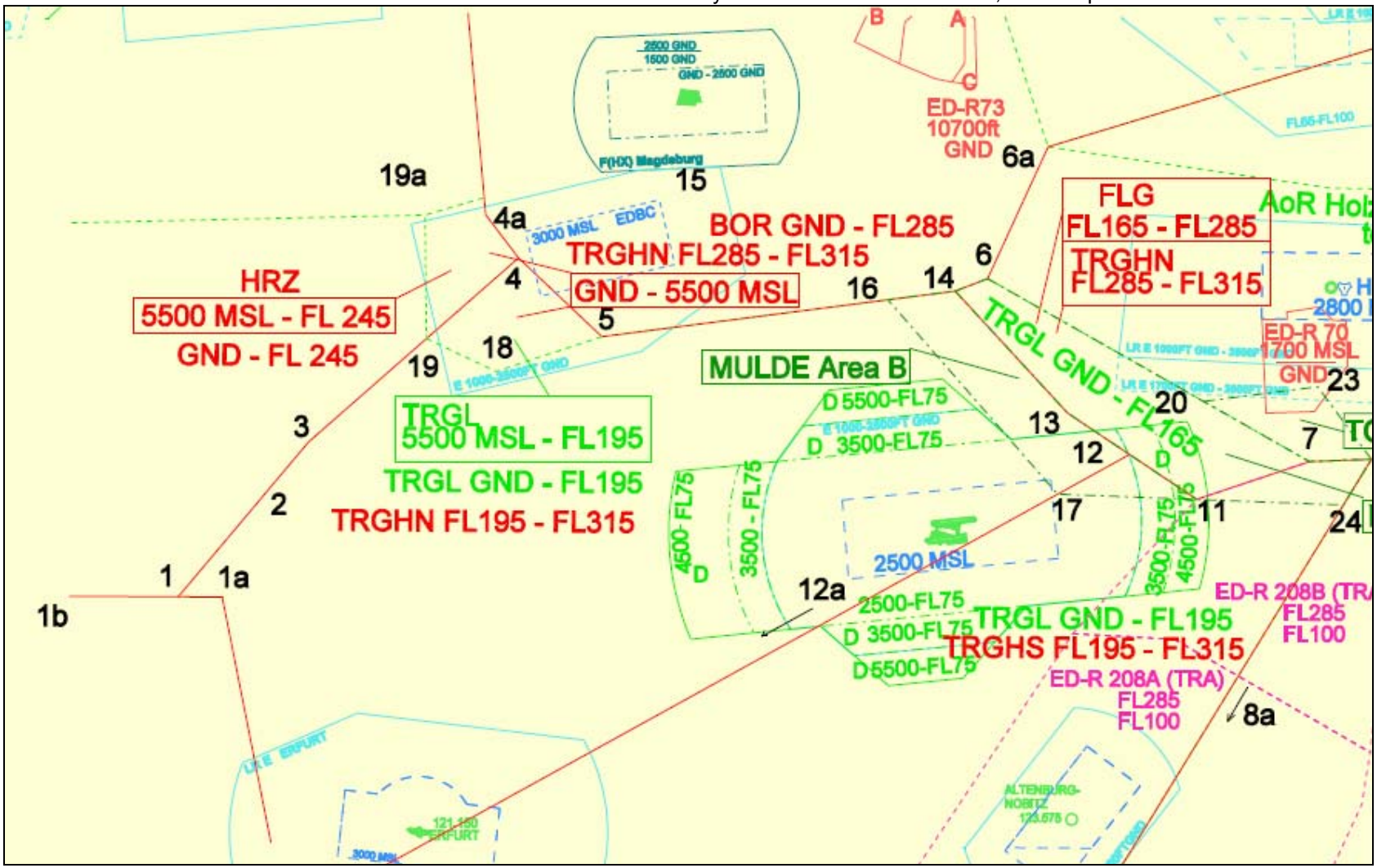
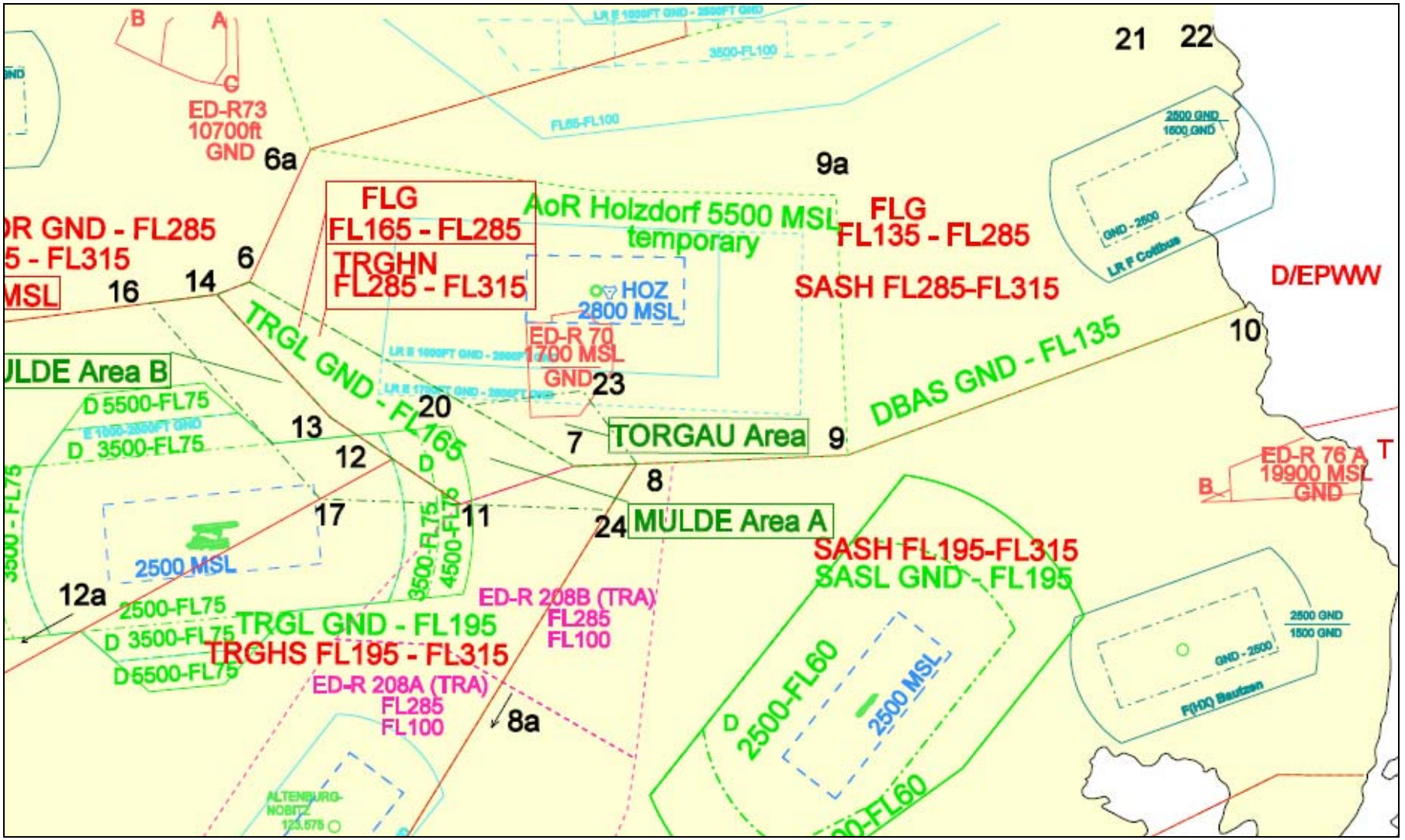


Chart 2 Sectorisation close to the AOR boundary of Munich and Bremen ACC, eastern part.



Appendix 2 to Annex B.

Chart 1

RIMET, RISOK Low and ABGUS Low Areas.

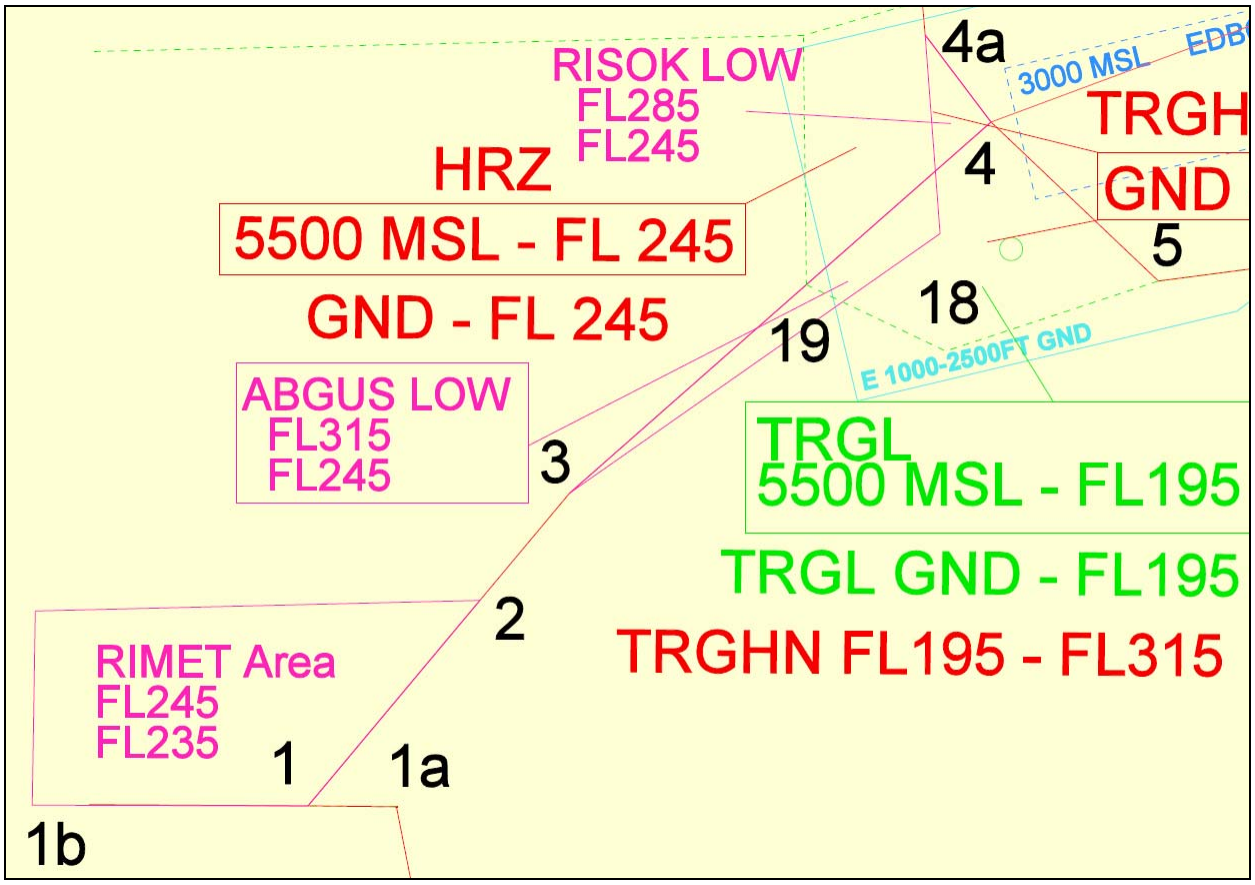
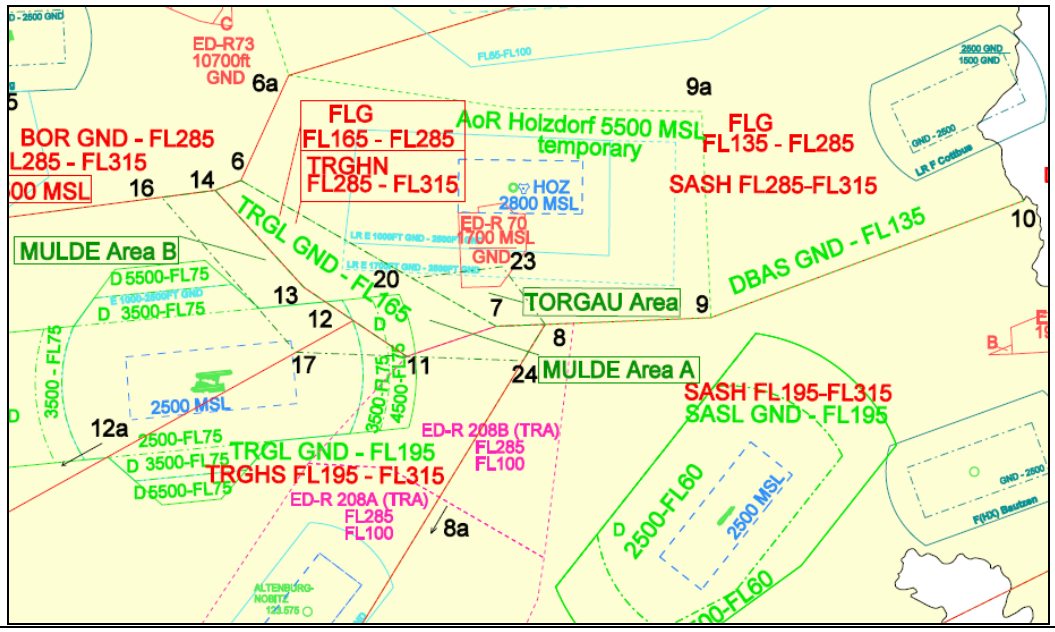


Chart 2

Cottbus/Drewitz CTA and Airspace class F.
Holzdorf AoR, TORGAU and MULDE Area.



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Annex C.

Flight Data Exchange.

Effective: 2009-06-04
Revised: 2010-07-29

C.1 General.

C.1.1 Basic Flight Plans.

Basic flight plan data are normally available at both 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.

Current flight plan data for IFR-flights and VFR-flights at night or within airspace class C shall be exchanged automatically by ABI/PAC/ACT/LAM-messages in accordance with Appendix 1 to Annex C.

C.1.2.2 Verbal Coordination.

Whenever automatic data exchange is not available and for all flights for which an automatic message exchange is not a standard operating procedure, flight details and estimates shall be exchanged verbally.

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

In any case, data passed verbally shall take precedence over data exchanged automatically.

Verbal estimates shall be passed at least 10 minutes (departures from Berlin airports 8 minutes) prior to, but not earlier than 30 minutes before the aircraft is estimated to pass the common boundary.

C.1.2.3 Failure of Automatic Data Exchange.

In the event of a failure which prevents the automatic data transfer, 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. Within the context of RVSM, such information should include:

a. the RVSM approval status of the aircraft; and
b. whether or not a non-RVSM approved aircraft is a State aircraft.

C.1.4 **Revisions.**

Any significant revision to the flight data shall be passed as soon as possible to the accepting ATS unit.
Time updates of 5 minutes or more shall be forwarded to the receiving ATS unit.

When an aircraft is experiencing an in-flight contingency which impacts on RVSM operations the transferring unit shall inform the accepting unit by verbally supplementing the associated coordination message(s) with a description of the cause of the contingency.

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

Whenever

- the ACT message or verbal estimate cannot be passed at least 10 minutes (departures from Berlin airports 8 minutes) before the aircraft is estimated to pass the common boundary

or

- the coordinated flight level shall be changed within 5 minutes of the ETO for the transfer of control point,

either an expedite clearance request or an approval request, as appropriate, shall be initiated.

If the PAC procedure is applied for an aircraft not yet airborne with a flying time of less than 10 minutes to the transfer of control point an approval request is not required.

C.1.6 **Coordination Points.**

See paragraphs D2 and H 2.3 (NLFS).

C.2 Means of Communication.

C.2.1 **Equipment.**

Data exchange between the ATS units takes place via DFS PSN. Telephone communication is achieved by direct telephone lines or Munich-Karlsruhe-Bremen (1) or Munich-Maastricht-Bremen (2).

C.2.2 **Telephone Coordination.**

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 Munich ACC to Bremen ACC.

Receiving Sector at Bremen	Purpose of the Call	ACC Bremen Position	ISIS
HRZ	Flight plan Data, Estimates	WWC3A	2164
	Control Messages, Revisions, Approval Requests, Expedite Clearances	HRZP	2074
	Radar Coordination	HRZE	2064
BOR	Flight plan Data, Estimates	WWC1A	2109
	Control Messages, Revisions, Approval Requests, Expedite Clearances	BORP	2072
	Radar Coordination	BORE	2062

Receiving Sector at Bremen	Purpose of the Call	ACC Bremen Position	ISIS
FLG	Flight plan Data, Estimates	WWC1A	2109
	Control Messages, Revisions, Approval Requests, Expedite Clearances	FLGP	2073
	Radar Coordination	FLGE	2063
DBAS	Flight plan Data, Estimates	WWC1A	2109
	Control Messages, Revisions, Approval Requests, Expedite Clearances	DBASQ	2114
	Radar Coordination	DBASB	2113
TRAMON 202	Monitoring NLFS GE for routings via MG1 - KG3 -…	WWC1S	2082 2086
TRAMON 206	Flight plan Data, Estimates	WWC4A	2127
	Monitoring NLFS GE for routings via MG1 - MH1 and easterly	WWC3S	2029

WWC1M: 2199
WWCAM: 2120
WWC2I 2012
WWC3I 2013

WWC1F: 2099
WWC1D: 2119
Fax: +49 421 535 533
Mail: bremen.supervisor@dfs.de

C.2.2.2 Messages from Bremen ACC to Munich ACC.

Receiving Sector at Munich	Purpose of the Call	Munich ACC Position	SVS
TRGHN	Flight Plan Data, Estimates	TRGA	8182
	Control Messages	TRGHNP	8093
	Radar Coordination	TRGHNE	8083
TRGHS	Flight Plan Data, Estimates	TRGA	8182
	Control Messages	TRGHSP	8095
	Radar Coordination	TRGHSE	8085
SASH	Flight Plan Data, Estimates	TRGA	8182
	Control Messages	SASHP	8076
	Radar Coordination	SASHE	8066
TRGL	Flight Plan Data, Estimates	TRGA	8182
	Control Messages	TRGLQ	8092
	Radar Coordination	TRGLB	8082
SASL	Flight Plan Data, Estimates	TRGA	8182
	Control Messages	SASLQ	8094
	Radar Coordination	SASLB	8084

Receiving Sector at Munich	Purpose of the Call	Munich ACC Position	SVS
ALLOCATOR	Flight Plan Data, Estimates	TRGA	8182
	Control Messages	MMC2J	8044

MMCM: 8040
MMCAM: 8120
MMC2I: 8012
Mail: sv.edmm@dfs.de

MMCF: 8099
Fax: +49 89 970 1419
Telephone: +49 89 9780 322

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) direct speech lines to other ATS units, or

b) public telephone:

Munich ACC	COS EBG OST	089 / 9780 357
	MMCM	089 / 9780 364
		089 / 9780 330/1/6
		089 / 9701 603
	Mobile 0171 / 628 4774 (on request)	
	MMCAM	089 / 9780 317
	MMCF	089 / 9780 333/4
	Fax Opsroom 089 / 9701 419	
Back ups:	TRGL	089 / 9789 351
	SASL	089 / 9788 7683
	MMC2I	089 / 9780 322
Bremen ACC	WWC1M	0421 59634 89
		0421 51499 00
	WWCAM	0421 51499 02
	WWC1D	0421 51499 03
	WWC1F	0421 51499 06
	HRZP	0421 51499 19
	BORP	0421 51499 78
	FLGP	0421 51499 68
	DBASQ	0421 51499 69
	WWC2I	0421 51499 18
	WWC3I	0421 51499 64
	Fax Opsroom 0421 535 533	

C.3.2 Alternate Fall-Back Procedures for Coordination.

In case of communication failure where the alternatives described above 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 units concerned 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 Bremen ACC to Munich ACC</th><th>Messages from Munich ACC to Bremen ACC</th></tr>
<tr><td><u>ABI</u>
3 a+b
7 a+b+c
13 a
14 a+b+c
16 a
22 (9a+b+c,
15a+b+c,
80 and 81)</td><td rowspan="4">see para-graphs D.2 and H.2 (NLFS)</td><td colspan="2">ABI will be transmitted at FPL activation, but not later than 120 seconds prior to the ACT-transmission.</td></tr>
<tr><td><u>PAC</u>
3 a+b
7 a+b+c
13 a
14 a+b+c
16 a
22 (9a+b+c,
15a+b+c)</td><td>Bremen ACC shall transmit PAC for DEP EDBC via KENIG-SIDs and MAG-SIDs – (U)M736 – LUKOP.</td><td>Munich ACC shall transmit PAC for DEP EDDP (except ORTAG-SIDs) and EDDC only.</td></tr>
<tr><td><u>ACT</u>
3 a+b
7 a+b+c
13 a
14 a+b+c+d+e
16 a
22 (9a+b+c,
15a+b+c,
80 and 81)</td><td colspan="2">15 minutes prior to ETO COP or
30 NM prior to COP, whichever comes first.</td></tr>
<tr><td><u>LAM</u>
3a+b+c</td><td>If a LAM is not received at the transferring ATS unit within 45 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 ATS unit within 45 seconds after the ACT-transmission, a warning shall be displayed at the appropriate sector.</td></tr>
</table>

Note: 1.The exchange of PAC/ABI/ACT/LAM messages shall follow the OLDI standard, version 2.2 and include the following optional elements:

ABI/ACT field 22 shall include field type's 9a+b+c and 15a+b+c data with following route information as a minimum:

- COP + one route element after COP.

2. Bremen ACC uses the FDPS route validation functionality of COP -1/+1.

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Annex D.

Control and Coordination Procedures.

Effective: 2009-06-04
Revised: 2011-11-17

D.1 General conditions for acceptance of flights.

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

D.1.2 Flights shall be considered to be maintaining the co-ordinated flight level at the transfer of control point unless climb or descent conditions have been clearly stated by use of crossing conditions in the ACT or by verbal co-ordination - except if otherwise described in para D.2 or 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 (e.g. COP, route or flight level) the transferring unit shall initiate an Approval Request.

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.

D.1.6 **Handling of aircraft which do not carry RTF equipment capable of VHF 8.33 kHz channel spacing.**

Aircraft which do not carry RTF equipment capable of VHF 8.33 kHz channel spacing, except for UHF equipped State aircraft, shall be kept below FL195.

D.1.7 If an 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.1.8 **Changes of Runway Direction.**

D.1.8.1 EDDT, EDDB.

FLGP shall notify TRGHNP of any change of RWY direction at EDDT, EDDB. TRGHNP shall pass this information to TRGHSP, TRGL, SASH and SASL

D.1.8.2 EDDC.

SASLQ shall notify FLGP of any change RWY direction at EDDC. FLGP shall pass this information to DBASQ.

D.2 ATS-Routes, COPs, Sectors and Transfer Conditions.

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

D.2.1 Flights from Munich ACC to Bremen ACC.

Except if the RFL is lower, the following flights shall be coordinated and transferred as described in the table below.

Releases listed in the table are valid after transfer of communication.

Note: If more than one transfer condition is applicable to a specific flight, the transfer condition with the lowest allocated flight level applies.

Route and ACT COP (bold)	Transferring Sector	Transfer Conditions	Receiving Sector
Z21-**BERDI**	TRGHN At and above FL195 TRGL Below FL195	- enroute TFC, even FL, at FL220 - DEP EDDE at FL180	HRZ
T803-**BIRKA**		- DEST EDDV at FL220 and released by TRGH for descent - DEST EDVE, at FL180 and released by TRGL for descent	
M852-**BIRKA**		- enroute TFC, even FL - DEP EDDE at FL200 - DEST EDVE at FL180 and released by TRGL for descent	
KUMER-Y230		- DEP EDDP at FL200	
KENIG-(U)M726		- enroute TFC, odd FL - DEP EDDE at FL250	BOR
KENIG-Z20		- DEST EDBM/BC at FL90 and released by TRGL for turn + descent	
ODLUN-Y235-MAG		- DEP EDDP at FL100 and released by TRGL for turn and climb - DEST EDVE at FL120 - DEP EDAC at FL190	
ODLUN-Y233-EMBOX		- DEP EDDP at FL100 and released by TRGL for turn and climb - DEP EDAC at FL180	
XMAG-MAG SIDs-MAG**-** T804/(U)M736/ (U)L986[1)]		- DEP EDDP DEST EDBM, EDBC at FL80 and released by TRGL for turn + descent - DEP EDDP at FL100 and released by TRGL for turn + climb	
UMBAL-SIDs [2)]– **UMBAL**-Y234 – PENEK		- DEP EDDP at FL100 and released by TRGL for turn and climb	
UMBAL-SIDs [2)]– **UMBAL** DCT PENEK			
DESAR-UZ131		- enroute TFC	

[1)] only Non-PRNAV-equipped aircraft

[2)] UMBAL-SIDs only available between 2200UTC (2100UTC) – 0500UTC (0400UTC)

Route and ACT COP (bold)	Transferring Sector	Transfer Conditions	Receiving Sector
LORBO-T804	TRGHN At and above FL195 TRGL Below FL195	- enroute TFC - DEST EDDV at FL220 - DEST EDVE at FL120 - DEST EDBM/BC at FL80 and released by TRGL for turn + descent	BOR
LORBO-(U)N858		- enroute TFC	FLG At and above FL135 DBAS Below FL135
LELMA-T200		- DEST EDDT[3)], EDDB[3)], EDAY, EDAZ ● FL270 or below, descending FL230 (W-RWYs) ● at FL230 [4)] (E-RWYs) ● released by TRGHN for turn + descent ● at FL190 or below released by TRGL for turn +descent	
LELMA SIDs- **LELMA- T200**		- DEP EDDP [3)] at FL 70 or above, climbing FL110 and released by TRGL for turn + climb	
LELMA SIDs- **LELMA-** Y236		- DEP EDDP [5)] at FL 70 or above, climbing FL110 and released by TRGL for turn + climb	
LELMA-UQ353		DEP EDDP [6)] at FL 70 or above, climbing FL110 and released by TRGL for turn + climb	
VATUP-TL8	TRGHS At and above FL195 TRGL Below FL195	- enroute TFC - DEST ETSH at FL110	
TADUV-T202		- DEST EDDT[7)], EDDB[7)], EDAY, EDAZ ● FL270 or below, descending FL240 (W -RWYs) ● at FL240[8)] (E-RWYs) ● released by TRGHS for turn + descent ● at FL190 or below released by TRGL for turn +descent	
MILGU-TB2		- enroute TFC - DEST ETSH at FL110	
OGSEN-(U)L132	SASH At and above FL195 SASL Below FL195	- enroute TFC - DEP EDAC at FL160	
OSKAN-(U)M748		- enroute TFC - DEP EDDC, EDAB at FL140 and released by SASL for turn + climb	

3) TRGHN or TRGL shall issue the inbound clearance to arrivals EDDT, EDDB via T200 / RUDAK-STAR in case of E-RWYs at Berlin or may clear acft DCT KLF in case of W-RWYs at Berlin, unless otherwise requested by Bremen ACC.

4) For technical reasons the ACT-message for ARR EDDT, EDDB contains the SFL FL270 in case of E-RWYs at Berlin airports as well. Nevertheless TRGHN shall transfer these flights at FL230.

5) If RWY08 is in use at EDDP, DEPs EDDP via LELMA-SID-LELMA-Y236-OLBIK may be cleared DCT OLBIK unless otherwise requested by Bremen ACC

6) If RWY08 is in use at EDDP, DEPs EDDP via LELMA-SID-LELMA-UQ353 may be cleared DCT KLF unless otherwise requested by Bremen ACC; Routing only available between 2200UTC (2100UTC) – 0500UTC (0400UTC)

7) TRGHS or TRGL shall issue the inbound clearance to arrivals EDDT, EDDB via T202 / MILGU-STAR and may clear acft DCT ATGUP in case of W-RWYs or DCT KLF in case of E-RWYs at Berlin, unless otherwise requested by Bremen ACC.

8) For technical reasons the ACT-message for ARR EDDT, EDDB contains the SFL FL270 in case of E-RWYs at Berlin airports as well. Nevertheless TRGHS shall transfer these flights at FL240**.**

Route and ACT COP (bold)	Transfer-ring Sector	Transfer Conditions	Receiving Sector
OSKAN-T203	SASH At and above FL195 SASL Below FL195	- DEST EDDT[9)], EDDB[9)], EDAY, EDAZ ● at FL220 or even FL, if lower (W+ E-RWYs) ● released by SASH for turn + descent ● at FL190 or below released by SASL for turn + descent - DEP EDDC with DEST EDDT, EDDB at FL120 and released by SASL for turn	FLG At and above FL135 DBAS Below FL135
GARKI-Y621-**EBASA**		- DEP LKPR, LKKB, LKVO at RFL	
KOBUS-(U)M725		- enroute TFC - DEP EDDC, EDAB at FL140 and released by SASL for turn + climb - DEST EDCD at FL100	
KOBUS-(U)P31		- enroute TFC - DEP EDDC, EDAB at FL140 or above, climbing FL150 and released by SASL for turn + climb	
ABLOX-T204		- DEST EDDT[10)], EDDB[10)], EDAY, EDAZ ● descending FL230 or odd FL, if lower, (W+ E-RWYs) ● released by SASH for turn + descent ● at FL190 or below released by SASL for turn + descent - DEP EDAB at FL130	
OLBIK – UM748 – BOLBO – (U)L986		- DEST EDDV, EDVK, EDLP, EDLI, ETUO at FL290 (latest 7NM prior OLBIK/abeam OLBIK) and released by SASH for turn + descent	
DOBUR – (U)L986			

Wesentliches

[9)] SASH or SASL shall issue the inbound clearance to arrivals EDDT, EDDB via T203 / AKUDI-STAR and may clear acft DCT ATGUP in case of W-RWYs or DCT KLF in case of E-RWYs at Berlin, unless otherwise requested by Bremen ACC.

[10)] SASH or SASL may clear acft DCT NUKRO, unless otherwise requested by Bremen ACC.

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

Except if the RFL is lower, the following flights shall be coordinated and transferred as described in the table below.

Releases listed in the table are valid after transfer of communication.

Note: If more than one transfer condition is applicable to a specific flight, the transfer condition with the lowest allocated flight level applies.

Route and ACT COP (bold)	Transferring Sector	Transfer Conditions	Receiving Sector
Z16-**ABGUS**	HRZ At and above 5500 AMSL BOR Below 5500 AMSL	- enroute TFC, odd FL - DEST EDDE at FL190 - DEP EDDV [11] at FL230 • DEP EDDV with RFL above FL230 are released for climb by HRZE - DEP EDVE at FL170 • DEP EDVE with RFL above FL170 are released for climb by HRZE	TRGHN At and above FL195 TRGL Below FL195
Z21-**BERDI**	HRZ	- enroute TFC, odd FL, at FL210 - DEST EDDP at FL210 - DEST EDDE, EDBM at FL 150	
T236-**ADMOS**		- DEST EDDP, EDDE at FL190	
KENIG-SIDs-KENIG	BOR	- DEP EDBC 5000 AMSL or above, climbing FL80 and released to TRGL for turn and climb	
MAG-(U)Z20[12]		- enroute TFC - DEST EDGG FIR or ELLX at FL280 - DEP EDBM 4000 AMSL or above, climbing FL70 and released to TRGL for turn and climb	
Y800 - **ELTED**		- DEP EDVE at FL230 and released by BOR for turn + climb - DEP EDDV at FL280	TRGHN
BARAP-(U)M736		- enroute TFC, even FL, at FL260 - DEP EDBM, EDBC 4000 AMSL or above, climbing FL70 and released to TRGL for turn and climb - DEST EDDP FL150 or below, descending FL110 and released by BORE for turn and descent - DEST EDDE, EDAC at FL180 and released by BORE for turn and descent	TRGHN At and above FL195 TRGL Below FL195

[11] DEPs EDDV via Z16 - ABGUS may be cleared DCT GALMA unless otherwise requested by Munich ACC.
[12] DEPs EDDT, EDDB may be cleared DCT ERSIL unless otherwise requested by Munich ACC.

Route and ACT COP (bold)	Transferring Sector	Transfer Conditions	Receiving Sector
BARAP-(U)M736	BOR	- DEP EDDT[13)], EDDB[13)], EDAY, EDAZ, EDOP with DEST EDDN, EDQD, EDQC, EDQM, EDQK, EDQT, ETIC, ETHN at FL240 and released by BORE for turn - other traffic with Dest. EDDN, EDQD, EDQM, EDQC,EDQG, EDQK, EDQT, ETIC at FL260 and released by BORE for turn - DEP EDDT[13)], EDDB[13)], EDAY, EDAZ, EDOP with RFL280 or below at FL260 and released by BORE for turn - DEP EDDT[13)], EDDB[13)], EDAY, EDAZ, EDOP with RFL290 or higher at FL280 and released by BORE for turn	TRGHN At and above FL195 TRGL Below FL195
VATUP-TL8	FLG At and above FL135 DBAS Below FL135	- enroute TFC - DEP ETSH at FL100	TRGHS At and above FL195 TRGL Below FL195
MILGU- UL735		- enroute TFC	
MILGU-TB2		- enroute TFC - DEP ETSH at FL100	
Z998-**OSKAN**		- enroute TFC - DEST EDDC[14)], EDAC, EDAB at ● at FL150 and released by FLG for turn + descent ● at FL130 or below released by DBAS for turn	SASH At and above FL195 SASL Below FL195
SISGO-(U)Z36		- enroute TFC even FL - DEP EDDT[15)] (W-RWYs) ● at FL280 and released by FLG for turn ● flights at RFL270 or below are released by FLG or DBAS for turn - DEP EDDT[15)] (E-RWYs), DEP EDDB[15)] ● at FL240 and released by FLG for turn + climb ● flights at RFL230 or below are released by FLG or DBAS for turn - DEP EDCD at FL100 - DEST EDDP at FL200 - DEST EDAC at FL160	

[13)] DEPs EDDT, EDDB via BARAP - (U)M736 may be cleared DCT GALMA unless otherwise requested by Munich ACC.
[14)] FLG or DBAS shall issue the inbound clearance to arrivals EDDC via Z998/OSKAN-STAR.
[15)] DEPs EDDT, EDDB via SISGO - (U)Z36 may be cleared DCT MAREM unless otherwise requested by Munich ACC.

Route and ACT COP (bold)	Transferring Sector	Transfer Conditions	Receiving Sector
EBASA-(U)M725	FLG At and above FL135 DBAS Below FL135	- enroute TFC odd FL - DEP EDDT[16)] (W-RWYs) ● at FL250 or above, climbing FL270 and released by FLG for turn + climb ● flights with RFL260 or below released for turn by FLG or DBAS - DEP EDDT[16)] (E-RWYs), DEP EDDB[16)] ● at FL250 and released by FLG for turn + climb ● flights at RFL240 or below released for turn by FLG or DBAS - DEP EDCD at FL90 - DEST EDDC, EDAB ● at FL150 and released by FLG for turn + descent ● at FL130 or below released by DBAS for turn	SASH At and above FL195 SASL Below FL195
BUKIG-(U)P31		- DEST EDDC, EDAB ● at FL160 and released by FLG for turn + descent ● at FL130 or below released by DBAS for turn	

[16)] DEPs EDDT, EDDB via EBASA - (U)M725 may be cleared DCT HDO unless otherwise requested by Munich ACC.

D.3 Special Procedures.

D.3.1 Flights with Z-FPLs.

For flights with Z-FPLs ACT-messages will be exchanged, if the IFR-part starts before the common AoR-boundary and the flight is planned via an ATS-route and COP as listed under D.2.

In addition to the ACT-message flights with Z-FPLs shall be coordinated verbally except if their profile is described in this Annex or they are transferred at the RFL.

D.4 Coordination of Status of Special Areas in the ACI.

D.4.1 Holzdorf AoR.

Holzdorf APP will inform Bremen and Munich ACCs about activation and deactivation of the Holzdorf AoR. During the activation time of Holzdorf AoR coordination and transfer of flights across the common boundary between Munich ACC and Holzdorf AoR shall be accomplished between Munich ACC and Holzdorf APP.

D.4.2 **ED-R 208 (TRA-Sachsen 1).**

Center Munich Supervisor MMCM shall inform Center Bremen Supervisor WWC1M about activation and deactivation of ED-R 208 B (TRA-Sachsen 1).

Note: Center Bremen Supervisor ATC shall pass this information to DBASQ, FLGP and WWC1D.

D.4.3 **Coordination Procedure Sector TRGHN/S.**

Center Munich TRGH shall inform Center Bremen Sector FLG about consolidation and deconsolidation of Munich Sector TRGHN and TRGHS.

Annex E.

Transfer of Control and Transfer of Communication.

Effective: 2009-06-04
Revised: 2011-03-10

E.1 Transfer of Control.

Transfer of control shall take place at the common AoR-boundary, unless otherwise specified in paragraph E.3.

E.2 Transfer of Communication.

E.2.1 The transfer of communications shall take place not later than the transfer of control and as specified in para D.2, E.3 or H.2, unless otherwise co-ordinated.

E.2.2 **Frequencies.**

E.2.2.1 Munich ACC.

Position	**VHF**	**UHF**
TRGHNE	118,235	247.675
TRGHSE	133,230	338.575
TRGLB	126.175	379.925
SASHE	131.055	296.775
SASLB	125.625	264.925
MMC2I	125.800	375.325
MMC2J		356.725

E.2.2.2 Bremen ACC.

Position	**VHF**	**UHF**
HRZE	126.650	372.300
BORE	123.225	397.475
FLGE	136.450	369.300
DBASB	126.425	398.575
WWC1S	-	362.300
WWC3S (NLFS)	-	311.675 265.050
WWC2I	119.825	376.400
WWC3I	132.650	299.775

E.3 Specific Points for Transfer of Control and Transfer of Communications.

Not applicable.

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Annex F.

Radar Based Coordination Procedures.

Effective: 2009-06-04
Revised: 2010-12-16

F.1 SSR Code Assignment.

F.1.1 Both ATS units shall transfer aircraft on verified discrete SSR codes, or on verified code 1000, which are assigned in accordance with ORCAM.

F.1.1.1 DEST EDDT, EDDB via HDO or KILNU.

For DEST EDDT, EDDB via HDO or KILNU on transfer from Karlsruhe UAC via Munich ACC to Bremen ACC the SSR code check and if necessary the assignment of a new SSR code shall be done by Bremen ACC /FLG. Munich ACC will pass the SSR code by ACT message as received from UAC Karlsruhe.

F.1.2 Any change of SSR code by the accepting ATS unit shall only be initiated after the aircraft on transfer has passed 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 Munich ACC and Bremen ACC shall 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 shall be observed, except in emergency situations.

F.2.1.3 Vectoring within the respective AoRs may take place without coordination between the ATS units provided the distance to the AoR boundary is not less than 2.5 NM.

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

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

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: 1. 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.
2. When using speed control, pilots concerned shall be instructed by the transferring ATS unit to report their assigned speed 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.

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Annex G.

Supplementary Procedures.

Effective: 2009-06-04
Revised: 2011-11-17

G.1 Air Traffic Flow Management.

G.1.1 ATFM measures shall be co-ordinated between the ATS units, only if sudden unexpected situations occur which prevent early co-ordination through the CFMU or if such measures are effective only for a short period of time.

G.1.2 The Chiefs of Section/SV CC of Bremen ACC and/or Munich ACC shall decide whether ATFM measures are taken.

G.1.3 All ATFM measures coordinated between the two units for an unlimited period shall be deemed cancelled at 00:00 UTC without further coordination being necessary.

G.2 Contingency Procedures – General.

G.2.1 In case of technical or catastrophic outage resulting in the disruption of the provision of ATS at Bremen ACC or at Munich 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.2.2 The CCP of the failing ATS unit shall decide about the required contingency measures and coordinate the subsequent execution of the contingency plan.

If the failing ATS unit is not able to declare Contingency operations, all adjacent ATS units shall inform each other as well as the CFMU. In this case one of the aiding units shall declare Contingency operation.

The Contingency operation procedures shall be terminated at the time the failing unit is able to continue with normal operation.

G.2.3 In case of contingency the regulations of this chapter shall take precedence over the respective provisions of Annexes A to F and H to this LoA.

G.3 Contingency Procedures Bremen ACC.

G.3.1 **Contingency Phase 0.**

In the event of an incident which requires the cessation of Operations or causes a sudden loss of Bremen ACC, the Supervisor of Bremen ACC shall notify and brief the Supervisor of Munich ACC 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 AoR of Bremen ACC.

When the Operations of Bremen ACC have ceased and the AoR of Bremen ACC is clear of all controlled traffic, the Supervisor in charge of operations shall declare contingency phase 0 for Bremen ACC.

From this time on

- the AoR of Bremen ACC shall be called the Contingency Area (CA) until full serviceability of Bremen ACC is recovered,

- the CA is a No-Fly-Zone, entry is prohibited until contingency phase 1 or 2 is activated.

G.3.1.1 Communications - CCP Bremen ACC.

Supervisor ATC +49 421 596 3489 or +49 173 340 1129

G.3.2 **Contingency Phase 1.**

Not applicable

G.3.3 **Contingency Phase 2.**

G.3.3.1 General.

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

The contingency sectors will correspond to existing sectors at Bremen ACC:

- **sectors BOR and FLG:**
  Contingency sector East 2 at CRC Schönewalde
- **Berlin Approach sectors DBAD, DBAS, DBAN, DBAST and DBANT**
  Contingency sector East Approach at TWR Schönefeld
- **sectors EMS, DST, HRZ:**
  Contingency sector South High at UAC Maastricht

G.3.3.2 Activation / Deactivation.

Bremen ACC Supervisor shall inform the coordinating partners about the activation of the contingency sectors.

G.3.3.3 ATFM Procedures.

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

G.3.3.4 Exchange of Flight Data.

G.3.3.4.1 Basic flight plan data are available at the contingency working positions only to some extent.

G.3.3.4.2 Since OLDI-data exchange with the contingency working positions is not possible, all **estimates** shall be coordinated by telephone. The prenotification time of estimates shall be 30 - 20 minutes before the aircraft is estimated to pass the common boundary.

G.3.3.4.3 An **expedite clearance** shall be obtained by the transferring ATS unit when

- the estimate cannot be passed at least 20 minutes before the aircraft is estimated to pass the common boundary or
- a change of the coordinated flight level has to be executed within 5 minutes prior to crossing the common boundary.

G.3.3.5 Control Procedures.

G.3.3.5.1 General.

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

G.3.3.5.2 **Separation minima** between aircraft on transfer shall be 15 NM constant or increasing.

G.3.3.6 Voice Communication Systems.

All coordination partners of Bremen ACC shall make sure that they are able to reach the Bremen ACC contingency working positions via MFC numbers, taking into consideration that Bremen ACC is completely off, including the technical systems. Public Phone shall be used as back up system. During exercises all systems at Bremen keep on running, beside OLDI-data exchange.

G.3.3.7 Contingency sectors and communications.

Bremen ACC Contingency sector (Aiding Unit) Combined sectors	**Type of message**	**Position**	**Communications**
Contingency Bremen East 2 (CBE2) (CRC Schönewalde) airspace of BOR, FLG	Control Messages, Expedite Clearances, Approval Requests, Revisions, Estimates	CBE2P Planner	MFC: 34 7691 Public Phone: +49 35389 8633 796
	Radar Coordination	CBE2E Executive	MFC: 34 7692 Public Phone: via Planner **VHF 126.075 MHz** **UHF 396.975 MHz**
	Flight plan data and estimates	CBEBA Assistant	MFC: 34 7695 Public Phone: +49 35389 8633 797

Wesentliches

Bremen ACC Contingency sector (Aiding Unit) Combined sectors	**Type of message**	**Position**	**Communications**
Contingency Bremen East Approach (CBEA) (TWR Schönefeld) airspace of DBAS, DBAN, DBAD, DBAT	Control Messages, Expedite Clearances, Approval Requests, Revisions, Estimates	CBEAP Planner	MFC: 34 2700 Public Phone: +49 30 63496 220
	Radar Coordination	CBEAE Executive	MFC: 34 2702 Public Phone: via Planner **VHF 125.300 MHz** **UHF 240.975 MHz**
	Flight plan data and estimates	CBEAA Assistant	MFC: 34 2706 Public Phone: via Planner
Contingency Bremen South High (CBSH) (UAC Maastricht) airspace of **HRZ**	Control Messages, Expedite Clearances, Approval Requests, Revisions, Estimates	CBSHP Planner	MFC: 34 4931 Public Phone:+31 433662520
	Radar Coordination	CBSHE Executive	MFC: 34 4930 Public Phone: via Planner **VHF 133.725 MHz**
	Flight plan Data, Estimates	CBNSA Assistant	MFC: 34 4924 Public Phone +31 433662523

Contingency Supervisor **CBNSM**	Procedures, Capacity, Emergency	Supervisor Bremen	MFC: 34 4923 Public Phone +31 433662522

G.3.4 **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 Contingency Procedures Munich ACC.

G.4.1 **Purpose**.

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

G.4.2 **Contingency Phase 0.**

When the operational status of Munich ACC becomes impaired to such an extent, that ATS can no longer be provided, the Supervisor in charge of operations shall declare the state of emergency;

From this time on until further notice:
- the AoR of Munich ACC shall be called the Contingency Area (CA);
- the CA is a No-Fly-Zone, entry is prohibited;

Note: Contingency Phase 1 is not applicable.

G.4.3 **Contingency Phase 2 - Resuming Operations at Aiding Units.**

In contingency phase 2 Munich ACC re-establishes the provision of ATS within its AoR by opening the following contingency sectors at Meßstetten CRC and ETSI.

- Meßstetten CRC: North_1, North_2, South_1, South_2, East_1, East_2

G.4.3.1 Activation / Deactivation.

Munich ACC supervisor at Meßstetten CRC shall inform the adjacent supervisor about the activation and VHF allocation of the contingency sectors.

G.4.3.2 ATFM Procedures.

Necessary ATFM-measures to be applied during contingency phase 2 will be initiated by the supervisor Munich ACC at Meßstetten CRC.

G.4.3.3 Exchange of Flight Data.

Since OLDI-data exchange with the contingency working positions is not possible and no flight plan data are available, all estimates shall be coordinated by telephone. The prenotification time of estimates shall be 30 - 20 minutes before the aircraft is estimated to pass the common boundary of responsibility.

An expedite clearance shall be obtained by the transferring ATS unit when the estimate cannot be passed at least 20 minutes before the aircraft is estimated to pass the common boundary of responsibility.

G.4.4 **Procedures.**

Because there is no automatic data transfer possible with the aiding units, all coordination shall be done verbally via telephone lines.

The ATC working positions at the aiding units shall apply a minimum radar separation of 10 NM.

Transfer of radar control may be effected without prior coordination provided the minimum flight time between successive aircraft about to be transferred is 3 minutes, however not less than 20 NM constant or increasing.

G.4.5 **Communications at Aiding Units.**

East Sectors	Type of message	Position	Communications
FRKL, FRKH, FRKU, SASL, SASH East_1 (at Meßstetten CRC)	Control messages	Planner	34 7395
	Radar co-ordination	Executive	126.175 MHz
	Flight plan data and estimates	Assistant	34 7397/98
TRGL, TRGHN, TRGHS East_2 (at Meßstetten CRC	Control messages	Planner	34 7396
	Radar co-ordination	Executive	126.175 MHz
	Flight plan data and estimates	Assistant	34 7397/98
For all aiding units:			
ATC supervisor Munich ACC / UAC (at Meßstetten CRC)	Air traffic management	Supervisor Munich ACC / UAC	+49 7431 6347 5547

G.5 Contingency - Emergency Recovery Plan for Maastricht UAC.

Supervisor Bremen ACC will inform Supervisor Munich ACC if Maastricht UAC Duty Supervisor declares the state of emergency and the AoR of Maastricht UAC will be called a Contingency Area.

Phraseology to be used: ”MAASTRICHT UAC is out of service; stop ALL entries into the Contingency Area (CA)*.”*

Annex H.

Monitoring and coordination of flights in the NLFS GE.

Effective: 2009-06-04
Revised:

H.1 Responsibilities.

As a rule, the Bremen and Munich ACCs shall be responsible for monitoring air traffic on the routings of the Night Low Flying System (NLFS GE) within their AoR.

H.2 Coordination and control procedures.

H.2.1 OAT flights within NLFS GE shall be coordinated and transferred as described in the table below.

Route	Transferring position	COP /Altitude	Receiving position
KG3 – MG1 – MG2	WWC1S	MG1 (MG1A) A1.0	MMC2J
MG2 – MG1 – KG3	MMC2J		WWC1S
MG3/MH1 – MG1 – MG2	WWC3S		MMC2J
MG2– MG1 – MG3/MH1	MMC2J		WWC3S
PG1 – PG2	WWC3S	PG1 A1.0	MMC2J
PG2 – PG1	MMC2J	PG2 A1.0	WWC3S

H.2.2 The transfer of communication shall normally take place at the COP.

H.2.3 Coordination of OAT flights entering the NLFS, conducted within the NLFS and leaving the NLFS, shall take place by automatic data exchange as prescribed in the tables below.

Independent of the automatic data exchange all coordination of OAT-flights across the common AoR boundary entering, leaving or within the NLFS shall be done by telephone additionally.

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

H.2.4 **NLFS Segment MG1 - MG3 - NH2.**

WWC3S shall inform TRGLQ on the activation and deactivation of the NLFS segment **MG1 - MG3 - NH2** in due time, stating whether it is used as enroute, entry or exit segment. During the activation TRGLB shall separate his own traffic to this NLFS segment.

END