to	Distribution list				**LoA 43**
from	S. Borchert, CC/FB-N	phone	0421 5372 180	date DRF until	02.12.2011 26.01.2012

Amendment of the LoA between Laage TWR/APP and Bremen ACC wef 15.12.2011

1. Essentials

Annex D: D.3.2: "For all IFR departures planned to enter the AoR of Bremen ACC a release shall to be obtained from the appropriate sector. Such a clearance shall be valid for a period of five minutes."

Annex G: G.3.1.2.1: Radio Lost Com Procedure within Radar Pattern with Laage TACAN serviceable: Addition of the sentence: "If ILS is available transit from TACAN to LOCALIZER inbound course and perform ILS final."

G.3.2.2: New Bail Out Procedure Jägerbrück: "Radar guidance to position R080 NEG TACAN 27 DME. Upon reaching this point the pilot will set heading 120° and leave the aircraft at a minimum altitude of 2000ft AGL and speed is set to 180-230 KDAS."

2. List of Changes

Date	Parts	Page(s)	insert, replace, delete
15.12.2011	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): MRZ												

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):	MRZ										

Distribution list: LoA I, T. Teichert

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LETTER OF AGREEMENT

between

DFS Deutsche Flugsicherung GmbH
Branch North, Center Bremen
Bremen ACC

JG 73“S“ Laage
Flugbetriebsstaffel
Laage TWR/APP

In the following referred to as „parties“.

Effective: June 07, 2007

1 General.

1.1 Purpose.

The purpose of this Letter of Agreement is to define the coordination procedures to be applied between Bremen ACC, Laage TWR and Laage APP, when providing ATS to General Air Traffic (GAT) and/or Operational air traffic (OAT).

These procedures are supplementary to MO-ATS and BesAnMilFS 2-100.

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 Letter of Agreement.

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

2.1 Areas of Responsibility.

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

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

2.1.1 Bremen ACC.

Lateral limits	:	Bremen FIR as published in the AIP Germany
Vertical limits:		GND - FL245
and		
Lateral limits		Munich FIR as published in the AIP Germany,
Vertical limits:		GND - FL245
and		
Lateral limits		Rhein UIR as published in the AIP Germany,
Vertical limits:		FL245 - FL285.

2.1.2 Laage TWR.

Lateral limits	Laage CTR as published in the AIP Germany
Vertical limits	GND – 2300 ft MSL

2.1.3 Laage APP.

Area of Responsibility Laage as defined in Appendix 1 to this LoA.

3 Procedures.

3.1 The procedures to be applied by Bremen ACC and Laage TWR/APP 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: Supplementary Procedures

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 parties.

4.2 **Revision of the Annexes to the Letter of Agreement.**

The revision of Annexes to the present Letter of Agreement requires the mutual consent of the parties (representative Bremen ACC and Senior Air Traffic Control Officer [SATCO] Flugbetriebsstaffel Laage) 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 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 parties may take place at any time.

5.2 Cancellation of this Letter of Agreement by either party is possible at any time, provided that the cancelling party declares its intention to cancel the Letter of Agreement with a minimum pre-notification time of 3 months before the date the cancellation is to take effect.

6 Validity.

This Letter of Agreement becomes effective June 07, 2007 and supersedes the Letter of Agreement between DFS Deutsche Flugsicherung GmbH, Branch North, Center Bremen and JG 73 “S“ Laage, Flugbetriebsstaffel, dated December 16, 2006.

Bremen, date

_____
i. V. Werner Spier
Deutsche Flugsicherung GmbH
Head of Operations Bremen ACC

Laage, date

_____
Edgar Reuber
Oberstleutnant
Chef Flugbetriebsstaffel JG 73 “S“

Birkenfeld, date

_____
Kdo. 2. Luftwaffendivision
A3b öMilFS

Langen, date

_____
i. V. Dirk Mahns
Head of ATM Operations
and Strategy
DFS GmbH

Langen, date

_____
Dezernat I 2
Amt für Flugsicherung
der Bundeswehr

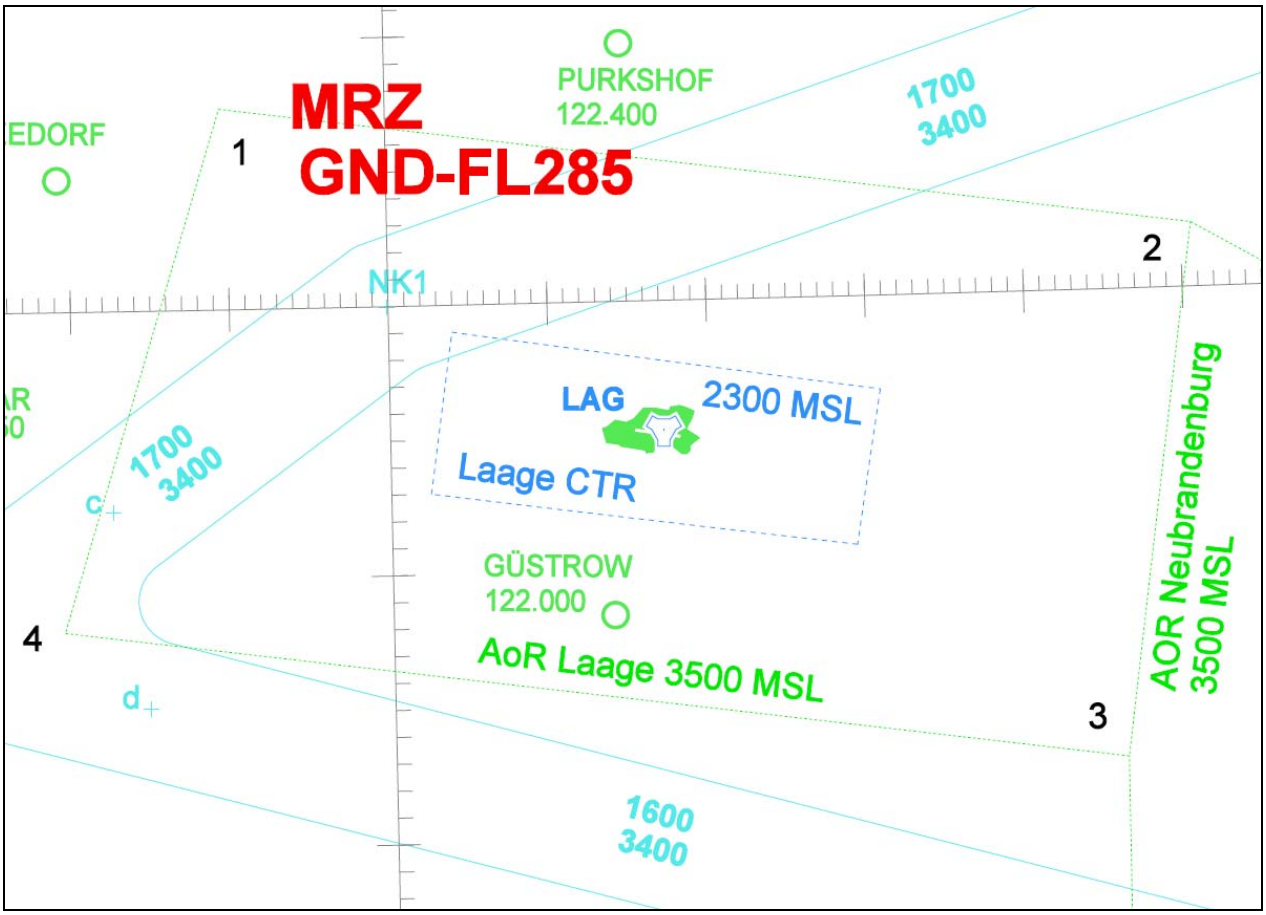
Appendix 1.

Paragraph 2.1.3 Area of Responsibility Laage APP.

1. Laage APP is responsible for the provision of Air Traffic Control Service, Alerting Service and Flight Information Service within the airspace depicted (Chart 1) and defined within the coordinates listed below, from GND up to 3500 ft MSL.

2. Outside the operational hours of Laage APP or when Laage ASR is off, responsibility for the airspace (except Laage CTR when active) rests with Bremen ACC.

3. Chart 1



4. Coordinates of the AoR Laage

(1) N 54 07 27 E 011 49 33 – (2) N 54 02 23 E 012 50 39 – (3) N 53 42 37 E 012 45 46 - (4) N 53 48 05 E 011 39 22 – (1) N 54 07 27 E 011 49 33

Appendix 2.

RECORD OF AMENDMENTS

AMD No.	DATE	PART	PAGE(S)	add, delete or replace
1	April 10, 2008	Appendix 2	5	replace
		Annex C	C1, C3	replace
		Annex E	E1	replace
		Annex G	G1, G3	replace
2	March 12, 2009	Appendix 1	4	replace
		Appendix 2	5, 6	replace, add
		Annex A	A1, A4	replace, add
		Annex B	B1, B2	replace, add
		Annex C	C1, C4	replace, add
		Annex D	D1, D2 D4	replace, add
		Annex E	E1, E2	replace
		Annex F	F1, F2	replace
3	April 08, 2010	Appendix 2	5	replace
		Annex G	G1, G2	replace
4	February 10, 2011	Appendix 2	5	replace
		Annex G	G1, G2	replace
5	March 10, 2011	Appendix 2	5	replace
		Annex E	E1, E2	replace
6	May 14, 2011	Appendix 2	5	replace
		Annex A	A1, A3	replace
		Annex C	all	replace
		Annex D	all	replace
		Annex G	G1, G3	replace
7	June 30, 2011	Appendix 2	5	replace
		Annex G	G3	replace
		Annex G	G4, G5	add
8	September 22, 2011	Appendix 2	5	replace
		Annex A	A1, A3	replace
		Annex B	B1	replace
		Annex D	D1, D3	replace
		Annex G	G1 – G3	replace
9	October 20, 2011	Appendix 2	5	replace
		Annex D	D1, D3 - D6	replace
		Annex F	all	replace
10	November 17, 2011	Appendix 2	5	replace
		Annex G	G1, G2	replace

11	December 15, 2011	Appendix 1	4	replace
		Appendix 2	5, 6	replace, add
		Annex D	D1, D2	replace
		Annex G	G1, G3	replace

Annex A.

Definitions and Abbreviations.

Effective: June 07, 2007
Revised: September 22, 2011

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 **Division Level.**

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

A.1.4 **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 pre-notification time, or
- an aircraft in flight intending to operate under conditions other than those described in mutually agreed procedures.
- a change of the coordinated flight level within 5 minutes of the ETO for the transfer of control.

A.1.5 **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 pre-notification time.

A.1.6 **Release.**

In any of the below listed cases of release of aircraft/formation of aircraft, the transferring ATS unit remains responsible for separation within its AoR unless otherwise agreed.

A.1.6.1 Release for Climb.

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

A.1.6.2 Release for Descent.

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

A.1.6.3 Release for Turn.

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

1.7 **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.

1.8 **Operational Air Traffic (OAT).**

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.2 Abbreviations.

ACC	Area Control Centre
ACI*	Area of Common Interest
AFTN	Aeronautical Fixed Telecommunication
AIP	Aeronautical Information Publication
AoR*	Area of Responsibility
ASR	Aerodrome Surveillance Radar
ATC	Air Traffic Control
ATS	Air Traffic Services
AutoFüFmNLw*	Automatisiertes Führungs- und Fernmeldenetz Luftwaffe
BesAnMilFS*	Besondere Anweisung für die Militärische Flugsicherung
CA*	Contingency Area
CCP*	Contingency Contact Point
COP*	Coordination Point
COS*	Chief of Section
CRC*	Control and Reporting Center
CTR	Control Zone
DL*	Division Level
EAT	Expected Approach Time
ETO	Estimated Time Over Significant Point
ED-R*	Restricted Area within Germany
FIR	Flight Information Region
FIS	Flight Information Service
FL@PS	Flightplan Application Service
FSInfoSysBw*	Flugsicherungsinformationssystem der Bundeswehr
GAT*	General Air Traffic
IAF	Initial Approach Fix
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
KHz	Kilohertz
LoA*	Letter of Agreement
MFC*	Multi Frequency Coding (telephone system)
MHz	Megahertz
MRZE*	Center Bremen Mueritz Executive
MRZP*	Center Bremen Mueritz Planner
NM	Nautical Mile
OAT*	Operational Air Traffic
PAR	Precision Approach Radar
RTF	Radio Telephony
SSR	Secondary Surveillance Radar
UHF	Ultra High Frequ. (300-3000 MHz)
VCS*	Voice Communication System
VFR	Visual Flight Rules
VHF	Very High Frequency (30-300 MHz)
WWC1M*	Center Bremen Supervisor
WWC3I*	Center Bremen FIS
WWC3S*	Center Bremen TRAMON 206
WWC4A*	Center Bremen Assistant 4

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

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Annex B.

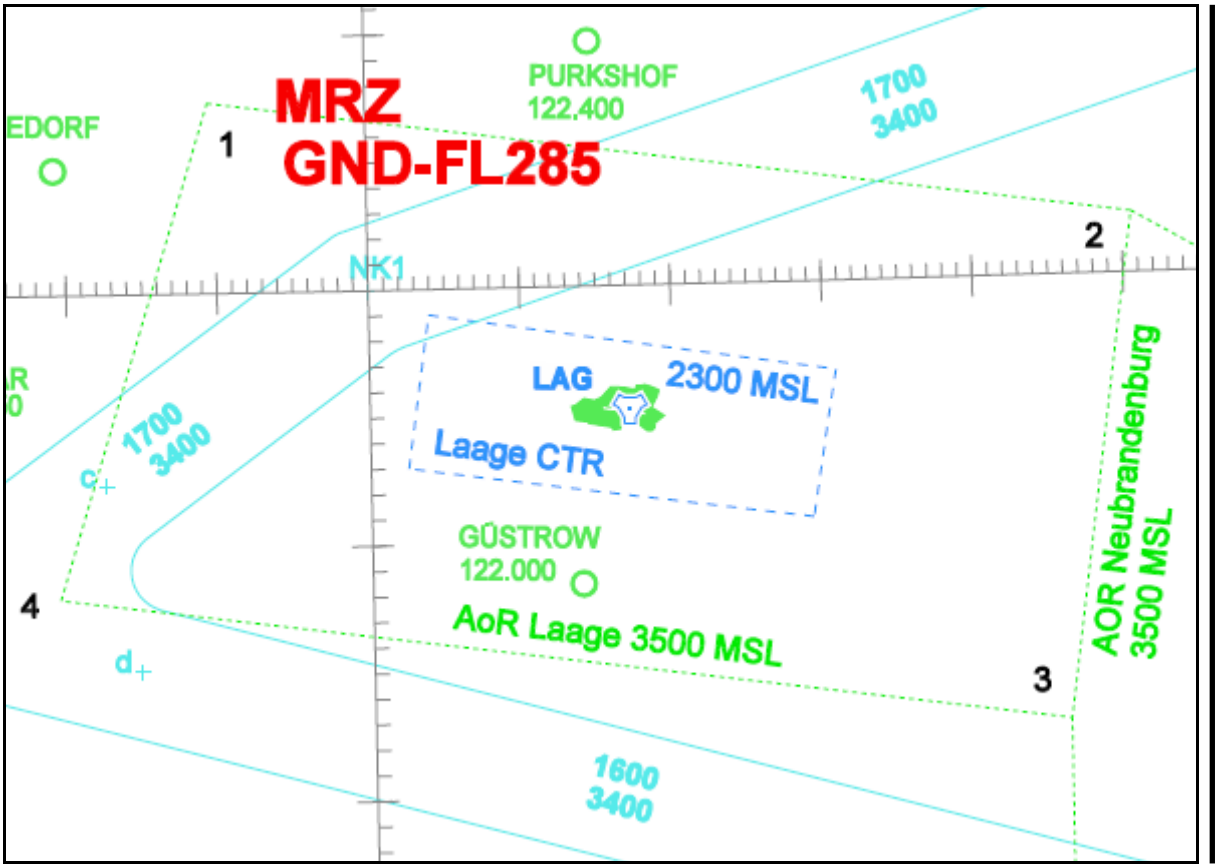
Area of Common Interest.

Effective: June 07, 2007
Revised: September 22, 2011

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

Area	Vertical Limits	Airspace Classification
Bremen FIR	FL100 - FL285 2500 ft GND - below FL100 below 2500 ft GND	C E G
Laage CTR	GND - 2300 ft MSL	D (HX)
Laage AoR	1000/2500 ft MSL - 3500 ft MSL below 1000/2500 ft MSL	E G

B.2 Sectorisation within ACI.



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Annex C.

Exchange of Flight Data.

Effective: June 07, 2007
Revised: May 14, 2011

C.1 General.

C.1.1 **Basic Flight Plan Data.**

Basic flight plan data should normally be available at both ATS Units concerned.

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.

ACT/LAM/PAC/COD/MAC/CHGMSG/FPLMSG/CNLMSG messages are exchanged between the two ATS Units.

C.1.2.2 Verbal Estimates.

For conditions that are not supported by the automatic data exchange, verbal estimates shall 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.

A verbal estimate 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:
- Notification of the discrete code of aircraft;

c) ETO,

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 updates of 5 minutes or more shall be forwarded to the receiving ATS unit.

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

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

C.2 Means of Communication and their Use.

C.2.1 **Equipment.**

The following lines are available between Bremen ACC and Laage TWR/APP:

- 1 data line
- 1 telephone line (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 following tables:

C.2.2.1 Messages from Laage TWR/APP to Bremen ACC.

Receiving Sector/COPs	Message	Position	Extension
Müritz	Flight Plan Data and Estimates	WWC 4A	#2127
ETNL	Control Messages, Expedite Clearances, Approval Requests and Revisions	MRZ P	#2037
	Radar Co-ordination	MRZ E	#2027
VFR FIS sector	Flight Plan Data and other Coordination	WWC3I	#2013
TRAMON TRA 206/MVPA	Flight Plan Data and other Coordination	WWC3S	#2029

Supervisor: #2199 Telefax: +49 421 53 55 33
FMP: #2099 E-Mail: bremen.wachleiter-fvk@dfs.de

C.2.2.2 Messages from Bremen ACC to Laage TWR/APP.

Receiving Sector/COPs	Message	Position	Extension
LAG RADAR	Flight Plan Data and Estimates	Coordinator	5403
	Control Messages, Expedite Clearances, Approval Requests and Revisions		
	Radar Co-ordination		
TWR		TWR A	5401
AIS	Flight Plan Data		5408

Supervisor: none Mail
Telefax: 038459 62 2325 (AIS)
038454 321 311 (TWR)

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:

Public telephone:

Bremen ACC	MRZP		0421 51499 80
	WWC1M		0421 5372 120
			0421 5963 489
Laage	TWR		038459 62 2333 / 2334
		Supervisor	038459 62 2330
	APP		038459 62 2336 / 2339
		Supervisor	038459 62 2335
Wing Operation Center			038459 62 2010
(if Laage Tower is closed)			

C.3.2 **Alternate Fall-Back Procedures for Co-ordination.**

In case of communications failure where the alternatives described in paragraph C.3.1 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.

C.4 System Failures.

C.4.1 **Failure of FSInfoSysBw.**

In case of failure of the FSInfoSysBw Laage AIS shall pass domestic OAT flight plans to WWC4A verbally and via fax.

C.4.2 **Failure of P1/ATCAS (FDPS)**

In case of failure of the P1/ATCAS (FDPS) the exchange of flight plan data and flight progress data shall be carried out by telephone.

C.4.3 **Failure of FL@PS**

C.4.3.1 In case of failure of FL@PS the TWR shall report the issued start-up and taxi clearance to the MRZP, who shall then activate the FPL in the P1/ATCAS system and transmit the SSR code generated by the P1/ATCAS system to the TWR.

C.4.3.2 Flight progress data for arrivals and overflights shall be transmitted verbally to Laage APP or Laage TWR, as appropriate.

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Annex D.

Procedures for Co-ordination.

Effective: June 07, 2007
Revised: December 15, 2011

D.1 General Conditions for Acceptance of Flights.

D.1.1 Coordination of flights shall take place by reference to the IAF for the relevant approach procedure. Deviations have to be coordinated.

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.

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 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 Unit shall notify the transferring Unit in the event that communication with the aircraft is not established as expected.

D.1.5 Laage TWR/APP shall inform Bremen ACC, sector MRZ, whenever starting or ceasing operations. When starting operations, Laage TWR/APP shall state:

- Operational status of frequencies, radar- and navigational facilities.
- Weather conditions within CTR (IMC/VMC),
- Runway in use and status of aircraft arresting systems.

Changes to the conditions stated above during times of operations shall be reported to Bremen ACC, sector MRZ.

In case Laage AoR is deactivated:

- Missed approaches of IFR-flights.

D.1.6 Verbal Coordination, if necessary, shall take place between Bremen ACC and:

- Laage APP when Laage AoR is activated.
- Laage TWR when Laage AoR is deactivated.

D.2 Activation and Deactivation of Airspace.

D.2.1 **Laage CTR (HX).**

D.2.1.1 Laage TWR shall inform Bremen ACC with a prenotification time of at least 5 minutes about the activation of the CTR.

D.2.1.2 Laage TWR shall inform Bremen ACC about the deactivation of the CTR.

D.2.2 **Laage AoR.**

D.2.2.1 Laage APP shall inform Bremen ACC with a prenotification time of at least 5 minutes about the activation of Laage AoR.

Laage AoR may be activated only with functional ASR-equipment of Laage.

Note: Activation may also take place if ATS is provided by authorised personnel of Laage ATC by using a working position at Center Bremen.

D.2.2.2 Laage APP shall inform Bremen ACC about the deactivation of Laage AoR.

D.3 Special Procedures.

D.3.1 **Arrivals.**

D.3.1.1 Approach clearances.

Clearances for Instrument Approach procedures shall be issued after coordination with Laage TWR/APP.

D.3.1.2 Release.

Arrivals Laage shall be realesed for turn and descent after transfer of communication.

D.3.2 **Departures.**

For all IFR departures planned to enter the AoR of Bremen ACC a release shall to be obtained from the appropriate sector. Such a clearance shall be valid for a period of five minutes.

D.3.2.1 ATC Clearances.

If an enroute clearance is not delivered by FL@PS Bremen ACC, sector MRZ, shall deliver enroute clearances in principle in short form (short clearance). A short clearance contains of:

Wesentliches

- clearance limit
- first point of route
- Altitude/level will be stated with the release
- SSR code
- any other information, if applicable

D.3.2.2 NO-PLAN clearance request (OAT-flights only).

In cases where a non planned IFR-Departure becomes necessary (e.g. due to change in weather situation) a NOPLAN clearance request shall be initiated, provided that the flight order states to comply with:

- a prescribed departure time, or
- a given time over target (TOT).

Laage APP/TWR shall transmit with the request the following data:

- Call sign
- Number and type of aircraft
- Aerodrome of destination or target area
- Requested level
- first point of route

D.3.3 IFR training pattern ESERO1A and ROLAX1A

These procedures will enable training flights, also in IMC, and shorten the flight path compared to radar vectoring. As the procedure can be flown by onboard means of navigation it will reduce the controllers workload. Nevertheless IFR separation shall be provided to these flights.
In case of deactivation of Laage AoR the approval and execution shall consider the following facts:

- The procedure will be flown by onboard means on frequency of Laage TWR.
- Before transmitting the Start-up approval Laage TWR shall coordinate flights using this procedure with Bremen ACC.
- Only one aircraft is permitted to use this procedure.
- Other arrivals and departures have priority to flights using this procedure.
- IFR separation to flights using this pattern shall be applied by Bremen ACC. A transfer of communication to Bremen ACC is subject to coordination.

D.4 Coordination subject to Special VFR and VFR at Night.

D.4.1 During activation of Laage AoR coordination, transfer of control and transfer of communication of VFR flights at night shall take place as for IFR flights.

D.4.2 During activation of Laage CTR without activation of Laage AoR, special VFR flights or VFR flights at night may be conducted without coordination with Bremen ACC under responsibility of Laage TWR provided:

- the flights are limited to a max altitude of 2000 ft MSL and not entering airspace E
- SVFR flights and IFR flights do not take place at the same time,
- VFR flights at night and IFR flights do not take place at the same time
- if IFR flights to/from Laage are expected, special VFR flights and VFR flights at night are subject of coordination, to ensure vertical or lateral separation.

For these flights no lateral distance to the CTR boundary applies.

Between special VFR flights, special VFR flights and IFR flights, VFR flights at night and IFR flights in controlled airspace, LAG TWR may apply reduced separation with the consent of Bremen ACC.

D.5 Coordination subject to NLFS GE.

D.5.1 Bremen ACC is responsible for monitoring flights conducted in the NLFS GE within the AoR Bremen.

D.5.2 Coordination subject to NLFS GE, if applicable, shall be executed between Laage APP / TWR and WWC3S Bremen ACC.

D.5.3 Laage TWR/APP shall advise BREMEN ACC SV with E-Mail on Thursdays at latest about activities after 22.00 loc which are booked for the following week.

Appendix 1 to Annex D.

ROLAX 1A

TRAINING PATTERN AD ELEV 140 **LAAGE (ETNL)**

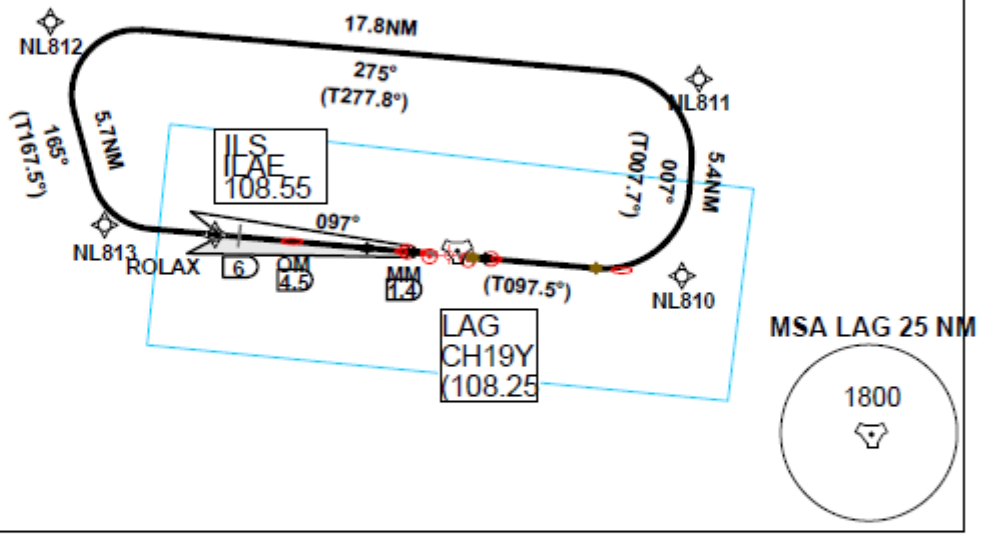
LAAGE TWR	LAAGE RADAR	BREMEN RADAR
336.400 118.425	358.650 133.625	259.825 124.175

TACAN/ILS	APP COURSE	GS INTCP ALT	GS	DA	TDZE	LDA
LAG CH19Y/ILAE 108.55	097°	1800	3°	339	139	8268

VAR: 2°E (2010)

RNAV (GPS) Departure: P-RNAV Required

Max IAS 200kt



Training-Pattern RWY 10 North

- Climb on RWY track 095° to 1800ft MSL
- Proceed via NL810, NL811, NL812, NL813 to ROLAX
- Proceed on ILS/DME RWY 10 as published

			DISPLAY:	
NL810	53°54'13.158"N	012°27'29.992"E	53°54.21'N	012°27.49'E
NL811	53°59'33.687"N	012°28'43.698"E	53°59.56'N	012°28.73'E
NL812	54°01'55.759"N	011°58'50.263"E	54°01.93'N	011°58.84'E
NL813	53°56'19.768"N	012°00'56.646"E	53°56.33'N	012°00.94'E
ROLAX	53°55'55.815"N	012°06'02.075"E	53°55.93'N	012°06.03'E

ROLAX 1A 53°55.09'N 012°16.76'E **LAAGE (ETNL)**

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ESERO 1A

TRAINING PATTERN AD ELEV 140 **LAAGE (ETNL)**

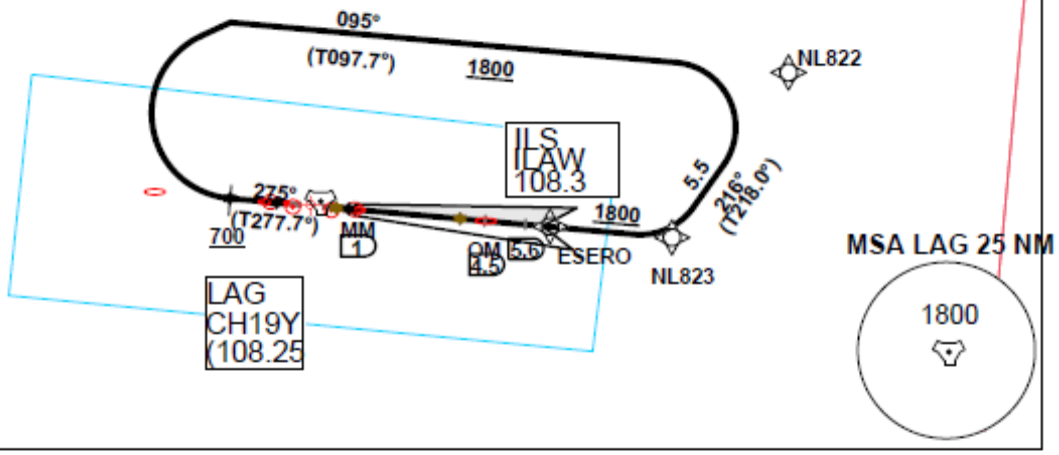
LAAGE TWR	LAAGE RADAR	BREMEN RADAR
336.400 118.425	358.650 133.625	259.825 124.175

TACAN/ILS	APP COURSE	GS INTCP ALT	GS	DA	TDZE	LDA
LAG CH19Y/ILAW 108.3	277°	1800	3°	333	133	8268

VAR: 2°E (2010)

RNAV (GPS) Departure: P-RNAV Required

Max IAS 200kt



Training-Pattern RWY 28 North

- Climb on RWY track to 1800ft MSL
- When passing 700ft MSL turn right to intercept track 095° inbound NL822
- Proceed via NL822 to NL823 to ESERO
- Proceed on ILS/DME RWY 28 as published

		DISPLAY:
NL822:	53°58'04.770"N 012°38'58.312"E	53°58.08'N 012°38.97'E
NL823:	53°53'44.504"N 012°33'13.917"E	53°53.74'N 012°33.23'E
ESERO:	53°54'12.419"N 012°27'39.546"E	53°54.21'N 012°27.66'E

ESERO 1A 53°55.09'N 012°16.76'E **LAAGE (ETNL)**

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Annex E.

Transfer of Control and Transfer of Communication.

Effective: June 07, 2007
Revised: March 10, 2011

E.1 Transfer of Control.

E.1.1 The transfer of control takes place at the common boundary line of responsibility.

E.1.2 In case AoR Laage is not active transfer of control takes place between Bremen ACC and Laage TWR on:

- Arrivals

  - when entering Laage CTR.

- Departures

  - in VMC when leaving Laage CTR,
  - in IMC immediately after take off.

E.2 Transfer of Communication.

E.2.1 The transfer of communication shall take place not later than the transfer of control, unless otherwise coordinated.

If a radio call of a VFR flight is received by an ATS unit which may not be responsible, the VFR flight will be recommended to establish radio contact with the ATS unit responsible if and when technical and other conditions permit.

E.2.2 In case Laage AoR is not active transfer of communication takes place between Bremen ACC and Laage TWR on:

- Arrivals

  - within 1 minute after coordination of transfer, latest when entering Laage CTR.

- Departures

  - immediately after take off.

Note: In case of single/double seated military jet aircraft or for all other aircraft in IMC/ during night prior starting take off run.

E.2.3 **Frequencies.**

E.2.3.1 Bremen ACC.

	VHF	UHF
MRZ	124.175 MHz	259.825 MHz
WWC3I	132.650 MHz	299.775 MHz

E.2.3.2 Laage APP.

	VHF	UHF
Radar	133.625 MHz	358.650 MHz
Precision	268.400 MHz	

E.2.3.3 Laage TWR.

VHF	UHF
118.425 MHz	336.400 MHz
122.100 MHz	

Annex F.

Radar Based Coordination Procedures.

Effective: June 07, 2007
Revised: October 20, 2011

F.1 SSR Code Assignment.

F.1.1 Both parties shall transfer aircraft on verified discrete SSR codes.

F.1.2 Any change of SSR code by the accepting unit shall only be initiated after the transfer of control point.

An observed SSR code change caused by Laage APP indicates that ground-air communication is established.

F.1.3 The accepting 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 Bremen ACC and Laage APP shall be subject to the serviceability of the respective radar systems and two-way direct speech facilities between the positions concerned.

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 may take place without coordination between the units, provided the following minimum distances to the common AoR boundary are observed:

F.2.1.3.1 During activation of Laage AoR:

By Bremen ACC:	lateral 5 NM / vertical 500 ft.
By Laage APP:	no lateral / vertical 500 ft.

Note: Laage APP shall provide a minimum distance of 2,5 NM to the Neubrandenburg AoR.

F.2.1.3.2 During activation of Laage CTR without activation of Laage AoR:

By Bremen ACC:	lateral 5 NM / vertical 700 ft.

Note: The procedures for Laage TWR are described under D.4.2.

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

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

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

Transfer of radar control may be effected without prior verbal coordination provided the minimum distance between successive aircraft about to be transferred is 15 NM and remains constant or is increasing.

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Annex G.

Supplementary Procedures.

Effective: June 07, 2007
Revised: December 15, 2011

G.1 Air Traffic Flow Management Procedures.

G.1.1 **General.**

In principle OAT is not subject to flow control measures. Local arrangements could be applied - for short periods of time only - to relieve emergency situations, e.g. system failure, until the problem has been resolved.

G.2 Contingency Plan for Bremen ACC.

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

G.2.1 **Contingency Phase 0.**

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

From this time on

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

G.2.1.1 Emergency Operations Staff Bremen ACC – Communications.

Supervisor ATC	+49 421 5963 489 +49 173 3401 129

G.2.2 **Contingency Phase 2.**

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

G.2.2.1 Activation / Deactivation.

Bremen chief of CCP shall inform the Laage TWR/APP about the activation and deactivation of the contingency sectors.

G.2.2.2 ATFM Procedures.

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

G.2.2.3 Exchange of Flight Data.

G.2.2.3.1 Basic flight plan data are available at the contingency working positions only to some extent.

G.2.2.4 Control Procedures.

G.2.2.4.1 General.

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

G.2.2.4.2 Separation minima between succeeding aircraft on transfer

- with verbal coordination 15 NM constant or increasing.
- without verbal coordination three minutes, but not less than 20 NM, constant or increasing.

G.2.2.5 Contingency sectors and communications.

Bremen ACC Contingency sectors (Aiding Unit) Combined sectors	**Type of message**	**Position**	**Communications**
Contingency Bremen East 1 (CBE1) (CRC Schönewalde) airspace of MRZ, MAR, MRZL	Control Messages, Expedite Clearances, Approval Requests, Revisions	CBE1P Planner	MFC: 34 7693 Public network: +49 35389 8633 798
	Radar Coordination	CBE1E Executive	MFC: 34 7694 Public network: via Planner Frequencies: VHF 134.650 / UHF 373.975
	Flight Plan Data and Estimates	CBEBA Assistant	MFC: 34 7695 Public network: +49 35389 8633 797

Note: Bremen ACC contingency working positions will call Laage TWR/APP on the extensions agreed in this LoA.

G.3 Special Procedures for Laage based Aircraft.

G.3.1 **Radio Lost Com Procedure within Radar Pattern.**

G.3.1.1 In VMC.

Contact Laage TWR, stay in VMC and perform a visual approach.

G.3.1.2 In IMC.

G.3.1.2.1 Laage TACAN serviceable.

Climb to 4000 ft MSL, try to Contact Laage TWR, and intercept ARC 15 for published TACAN FINAL for the runway in use.
If holding is required (i.e. heavy fuel weight) proceed to the published Laage holding (IAF 2) and climb FL70 until commencing HI-TACAN penetration.
If ILS is available transit from TACAN to LOCALIZER inbound course and perform ILS final.

G.3.1.2.2 Laage TACAN unserviceable.

Try to contact Bremen Radar, if unsuccessful divert to the alternate aerodrome.

G.3.2 **Bail Out.**

G.3.2.1 Procedure Ostsee.

Radar guidance to position R 360 LAG TACAN 25 DME. Upon reaching this position the pilot will leave the aircraft at a minimum altitude of 2000 ft ASL and speed is set to 180-230 KDAS.

G.3.2.2 Procedure Jägerbrück.

Radar guidance to position R080 NEG TACAN 27 DME. Upon reaching this point the pilot will set heading 120° and leave the aircraft at a minimum altitude of 2000ft AGL and speed is set to 180-230 KDAS.

Wesentliches

G.4 Contingency Plan for Laage APP.

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

In contingency case Laage Approach re-establishes the provision of ATS within its AoR by opening a contingency sector at aiding unit.

G.4.1 **Communications**

If Bremen ACC acts as aiding unit the following telephone numbers shall apply

Laage Approach Executive	MFC 34 2147
Laage Approach Co-ordinator	MFC 34 2148

G.5 EUROHAWK

G.5.1 **General**

In this chapter the additional or differing coordination procedures between Bremen ACC and Laage TWR/APP regarding the usage of ETNL as emergency landing field (ELF) for the EUROHAWK are described.

G.5.2 **Emergency landing („Contingency 3 – C3").**

G.5.2.1 An emergency landing of the EUROHAWK is called „Contingency 3 – C3" and is necessary in case of a severe technical problem. The RPA (Remote Piloted aircraft) EUROHAWK will set Mode 3A/C 7700 and follow autonomous the programmed C3-Profile.

G.5.2.2 The pilot will inform Bremen ACC immediately regarding the planned flight path via the "EUROHAWK-Telephone".

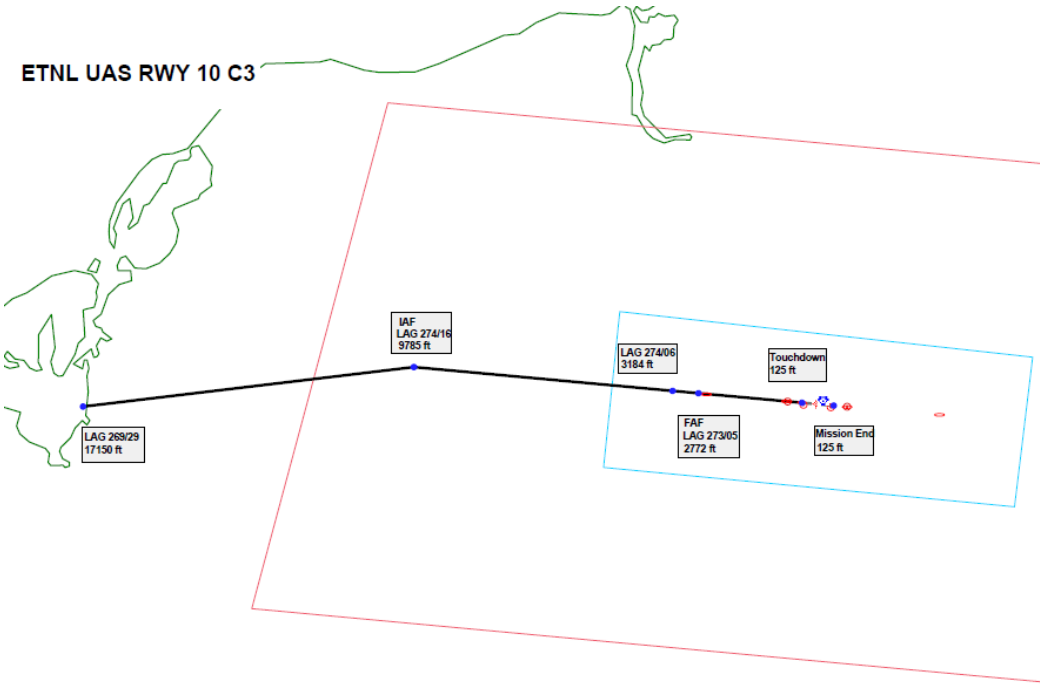
G.5.2.3 In case of a C3 the EUROHAWK will cut off the engine during final approach (latest time upon passing FAF). The flight will be continued as gliding flight. The still needed onboard equipment will be battery powered. A missed approach is not possible!

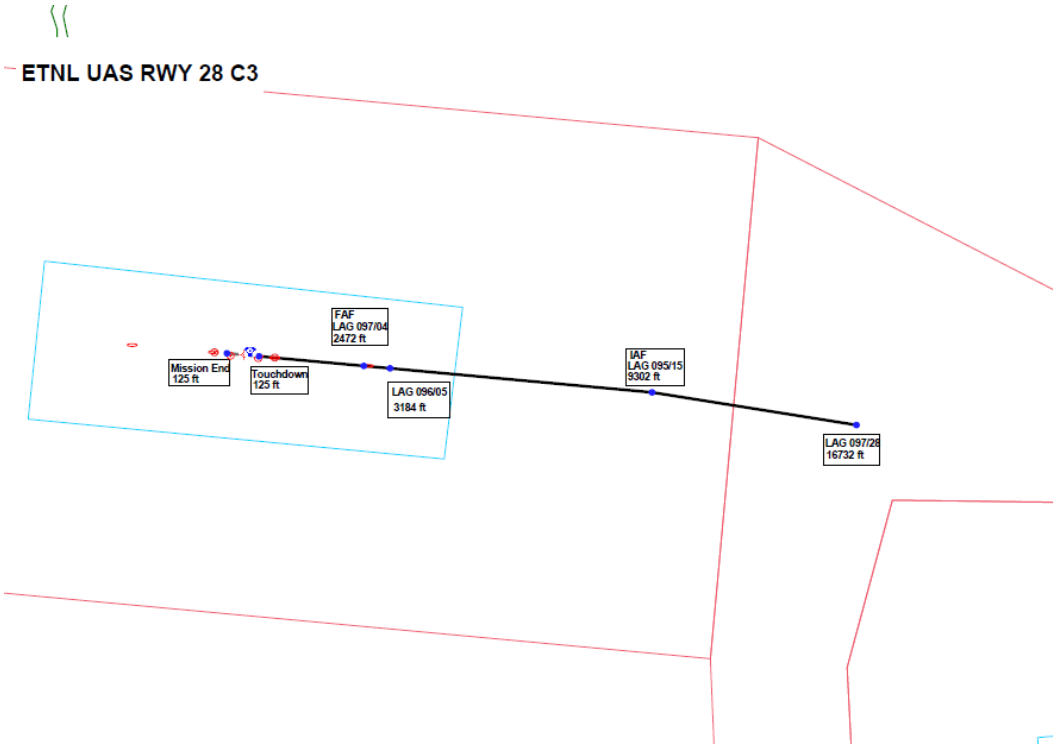
G.5.3 **C3 Profile.**

G.5.3.1 The C3 Profile is not a calculated approach procedure but just a described flight path. Bremen ACC just notes the intention announced by the pilot to follow the C3 Profile, but gives no clearance for the flight path.

The responsible ATC unit keeps as far as possible the expected flight path clear of other traffic and shall, as soon as possible, provide separation with conflicting traffic and issue essential traffic information , as appropriate..

G.5.3.2 C3 Flight path





G.5.3.3 A EUROHAWK standard instrument departure is not calculated for the ELF ETNL. This will be done on demand. A departure after an emergency landing is possible when regarding the airspace structure and procedures the necessary requirements are fulfilled.

G.5.4 Coordination

The IAF of the EUROHAWK C3 flight path is as a rule the first published waypoint of the flight path. Bremen ACC coordinates as soon as possible an ETO for this IAF to Laage TWR/APP.

END