



LETTER OF AGREEMENT

between

München ACC
Branch South

and

Karlsruhe UAC
Branch Upper

Effective: [November 28, 2024 \(AIRAC 2412\)](#)

1 General

1.1 Purpose

The purpose of this Letter of Agreement is to define the coordination to be applied between München ACC and Karlsruhe UAC when providing ATS to air traffic on the VATSIM network.

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

1.2 Operational Status

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

1.3 Validity

This LoA becomes effective [November 28, 2024](#) and supersedes revision [3.0](#) dated [November 30, 2023](#).

1.4 Revision control

Revision	Date	Author
1.0	06.01.2022	Jannik Vogel
1.1	11.08.2022	Jannik Vogel
2.0	23.03.2023	Jannik Vogel
3.0	30.11.2023	Jannik Vogel, Hannes Altmann, Konstantin Eierhoff
4.0	28.11.2024	Jannik Vogel

2 Areas of Responsibility for the provision of ATS

2.1 Areas of Responsibility

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

2.1.1 München ACC

München FIR and Rhein UIR as described in AIP Germany.

Vertical limits: GND – FL245 (München FIR)
FL245 – FL315 (Rhein UIR)

2.1.2 Karlsruhe UAC

Rhein UIR as described in AIP Germany.

Vertical limits: FL245 – FL660

2.2 Sectorization

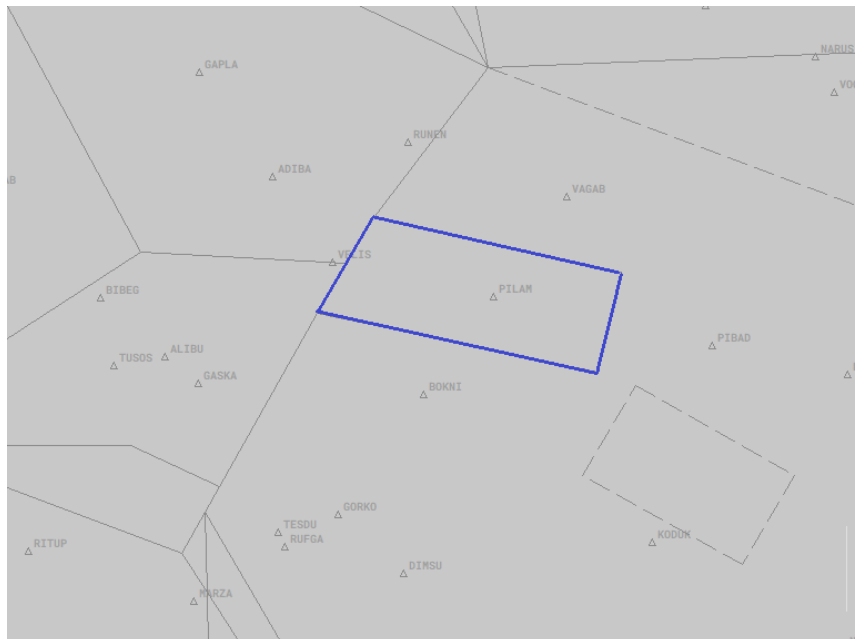
For detailed information about sectorization, see: vats.im/sectors-edmm and vats.im/eduu.

2.3 Delegation of the responsibility for the provision of ATS.

2.3.1 Delegation of ATS from München ACC to Karlsruhe UAC.

Within Rhein UIR the responsibility for the provision of ATS is performed by Karlsruhe UAC within the following area defined as PILAM-Area:

Vertical limits: FL295 – FL315



PILAM Area depicted as solid blue line.

2.3.2 Delegation of ATS from Karlsruhe UAC to München ACC.

Within Rhein UIR the responsibility for the provision of ATS is performed by München ACC within the following area defined as Ansbach (ANS) Area:

Vertical limits: FL245 – FL305



ANS Area depicted as solid blue line.

3 Procedures for Coordination

3.1 Definitions

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

Wherever VATSIM callsigns are used to describe the terms of a certain procedure, this procedure is also applicable for all higher stations that take over the responsibilities of said station. E.g., procedures for an APP-stations are also applicable for the respective CTR station fulfilling the duties of said APP station.

The use of VATSIM callsigns in this document includes any variation of said callsign. E.g. any procedure applicable for EDMM_CTR may also be used by EDMM_X_CTR.

3.2 General Conditions

Coordination of flights shall take place via the agreed coordination points (COP).

Coordinated flights shall be handed off via a valid COP. Any deviation shall be coordinated verbally, by text or by Euroscope inter-sector coordination.

Traffic shall be handed off at the levels, defined in the regulations below. If a specified level restriction cannot be met due to a lower RFL, traffic shall be handed off at RFL, if this does not cause a conflict with any other traffic. Otherwise, traffic shall be coordinated.

If a traffic situation is not covered herein or closely matching a covered one, individual coordination between the concerned sectors shall be made.

After Transfer of communications, traffic is NOT released for climb, descent or turns until Transfer of control or otherwise specified in this Letter of Agreement.

↓FLxxx / ↑FLxxx means „descending / climbing to a specified FL“, without any further restriction. Any required crossing/specified restriction shall be added separately. At level means that the aircraft shall be in level flight on a published flight level and in accordance with east/ west odd/even policy.

3.3 Flights from Karlsruhe UAC West and Central Sectors to Munich ACC

3.3.1 Arrivals

Destination AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
LOWI, LOWS	T104- DKB	WUR1	At FL310 or below	WLD
LOWI, LSZS, LSZA, LSZL, LIPB	M738/DCT- BATUB	TGO1	At FL310 or below	FUE
EDDP, EDAC	T279/T278- TAMEB	FUL1	5NM before TAMEB at FL250	GER
EDDP	FEDZA -T957		FL260	HAL
EDDP	IBAGA -T435	WUR1	At FL310	BBG
EDBM	FEDZA -N858	FUL1	At FL250	HAL
LKKV, EDMS	L984- KOMIB	WUR1	At FL250	BBG
	L604- GASKA	FUL1		
EDDM	T107- GESLU	TGO1	Descending FL250, to cross 5NM before GESLU at FL250 (*1)	NDG
	T104- DKB	WUR1	FL250 at DKB	WLD

(*1) Note: Released for descent to FL240.

3.3.2 Departures

Departure AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
EDDF	DINKU -L603	WUR1	Climbing FL290 out of FL230 (*1)	WLD
EDDF, EDFE, ETOU, EDFB	Y161- ELVAG -RIDAR		Climbing FL310 out of FL240	NDG
EDDF, EDFE, ETOU, EDFB, EDFZ	FEDZA -N858	FUL1	FL290 (*1)	HAL
	FEDZA -Y172			GER
	TAMEB -T278			
EDDF	MAGES - TAMEB DCT NEVKO			
ETAR, ETOU	BARSU -Z12-SULUS	WUR1	FL270	BBG
EDVK	GASKA -GORKO-SULUS	FUL1	FL270	

(*1) Note: Released for climb to FL310.

3.4 Flights from Karlsruhe UAC East Sectors to Munich ACC

3.4.1 Arrivals

Destination AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
EPWR	L856/M725/DCT- KOBUS	SPE1	KOBUS FL320	MEI
	BEBKU DCT LASIS		abeam KOBUS FL320	
EPPO	KOBUS -P31		KOBUS FL320	
	KOBUS DCT POZUM			
EDDB, EDAY, EDAZ	RELKO -T728	SAL1	RELKO FL320	GER
	T202- GOLAT -T202		GOLAT FL320	
EDDN, EDQD, EDQM, EDQC, EDQK, EDQT, EDQG, EDQA, ETIC	TOGRO T202		TOGRO FL320	
	VEVAS L87 TOGRO	VEVAS FL300		
EDDN, EDQD, EDQM, EDQC, EDQK, EDQT, EDQG, EDQA, ETIC, EDDE	MAG M736 GALMA	HVL1	MAG FL300	HAL
EDDW, EDDV, EDVE, EDBM, ETNW	DCT/M726- LASGA -M726	ERL1	LASGA FL320	BBG
EDDC, EDAB	Z715 /L984- KULOK -Z715		10 NM prior KULOK at FL320	HOF
	BAROB -Z35		TONSU FL320	
LKPR, LKKB, LKCS, LKVO, LKPD, LKCV, LKHK, LKMH	TALEG -L620	SPE1	FL320 at boundary SAL/SPE	GER
	OSTRA -Z21		EBASA FL320	MEI
	EBASA -M725			
	OSKAN -M748		OSKAN FL320	
EDDN, EDDS, EDJA	NOKSI -Z715		20NM before NOKSI FL320	
EDMS, ETHN, ETIN, LKKV	GALMA -M736	SAL1	GALMA FL320	HAL
LKPM	BEBKU -Z36	SPE1	BEBKU FL320	MEI
EDQD, EDQM, EDQC, EDQK, EDQT, EDQG, EDQA, ETIC, ETIN, ETHN, LKKV, LKCS			KOBUS -P31	
ELLX	MAG -Z20	HVL1	MAG FL300	HAL
EDDF, ETOU, EDFE, EDFZ, EDFQ	DCT NIMAB T171	SAL1	NIMAB FL320	
	T178 OSKAT T178		OSKAT FL320	
	TOPDI DCT NIMAB T171	HVL1	TOPDI FL300	
	DIDGI DCT NIMAB T171		DIDGI FL300	

Destination AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
EDDF, ETOU, EDFE, EDFZ, EDFQ	SULED DCT ROBEL	SAL1	abeam NAMUB FL320	GER
ETSI, ETSN	SULED -T202		SULED FL320	
	RELKO -M736		RELKO FL320	
EDDR, EDDS, EDFM, EDFV, EDJA, EDRY, EDRZ, EDTL, EDTY, EDSB, EDTM, ETAR	SULED DCT BAMKI		SULED FL320	
EDDM, EDMA, EDMO	SODRO -T703	ERL1	15NM before SODRO FL320	HOF
EDDF	NURGO -T170		NURGO FL320	
	SODRO DCT SULUS		SODRO FL320	
EDDF, ETAR	UNAVI -Z93		UNAVI FL320	

3.4.2 Departures

Not applicable.

3.5 Flights from Karlsruhe UAC South Sectors to Munich ACC

3.5.1 Arrivals

Destination AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
LIMC, LIML, LIME	M738 MADEB	ALP1	MADEB at FL320	ZUG
LIPZ, LIPH, LIPX, LIPO, LIPA	DCT BERAS M736		BERAS at FL320	TEG
LSZS, LSZA, LIPB	M736 TULSI	CHI1	MANAL / abeam MANAL at FL320	
LIPZ, LIPH, LIPX, LIPO, LIPA	M738/N871 MADEB	ALP1	MADEB at FL320	ZUG
LFST, LSZB	KPT L856 RAVED		KPT at FL320	FUE
LFST, LFGA, LFSB, LFJL	KPT L608 TEDGO		30NM prior KUNOD at FL320	
LSZH	P66 KPT		20NM prior KPT at FL320	
EDDS	P66/L12 MOTGI P66		10NM prior MOTGI at FL320	ZUG
EDSB, LSZS, EDFM, ETAR, EDTD, EDTL, EDRY	P66/L856 KPT RAVED		15NM prior KPT at FL320	FUE
EDSB, EDDR, EDRY, EDZ, EDFM, ETAD, ETAR	L173 MAH L173 RIDAR	ISA1	OTT at FL320	NDG
EDDF	Q163 NIKWU Q163	ALP1	NIKWU at FL320	FUE
EDDF	ERKIR UQ863 GESUC	ISA1	GESUC at FL320	NDG
EDSB, EDRY, EDFM	M726 KOGOL	CHI1	KOGOL at FL320	STA
EDDS, EDSB, EDRY, EDTY, EDFM	L608 KPT	ALP1	30NM prior KPT at FL320	FUE
LFSB, LFGA, LFGB, LFSC , LFSM, EDTG, LSGC, LSZ_ (excl. LSZH), LSM_ (excl. LSMD)	P66/L608/L856 KPT		KPT at FL320	
LSZH, LSMD	L856/L608 KPT		30NM prior KPT at FL320	
LOWS	L607 MOMUK		15NM prior BEMKI at FL320	ZUG
	T703 TIVDA	DON1	ARMUT at FL320	RDG
LOWL	L603 BESNI	ISA1	BESNI at FL320	NDG
	DCT TULSI N871	CHI1	TULSI at FL320	TEG
	T703 TIVDA	DON1	ARMUT at FL320	RDG
EDDN, EDDS, EDTY, EDQD, EDQM, EDQC, EDQK, EDQT, EDQG, EDQA	M726 KOGOL	CHI1	NORIN at FL320	STA

Destination AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
LOWI	M736 RUDNO	DON1	RUDNO at FL320	RDG
EDDC, EDAB	L132 RUDNO	DON1	10NM prior RUDNO at FL320	RDG
LKPR, LKPD, LKKB, LKCV, LKHK, LKMH, LKVO	L132 MAMOR		MAMOR at FL320	
	N871/Y700 NENUM UZ39		NENUM at FL320	EGG
	GAMSA DCT STAUB		STAUB at FL320	RDG
LKKV	MAH L132	ISA1	MAH at FL320	NDG
ETAR, EDGS, EDRK	M726 MAH			
EDDF	M726 ERNAS / T161 GOLMO T161	DON1	GOLMO / abeam GOLMO at FL320 (*1)	ALB
EDDF, ETOU, EDFE, EDFZ	M726 ERNAS Y101 TALAL		TALAL at FL320	
	AKINI T159 TALAL			
EDDF	Q162 ERMEL		10NM prior ERMEL at FL320	RDG
EDQG	L610 STAUB		STAUB at FL320	
EDSB, EDDR, EDRZ	L610 UNKUL Z744 PETIX		UPALA at FL320	ALB
EDDP, EDAC, EDDE, EDFQ, EDVK	DCT / M726 UPALA		10NM before UPALA at FL320	
EDFQ, EDGS, EDDE, EDDP, EDVK	L604 RUDNO		RUDNO at FL320	RDG
LKCS	AMDID N871	CHI1	AMDID at FL320	TRU

(*1) Note: Flights are released for descent and turn within DON sector. If spacing cannot be accomplished by DON, successive arrivals may be revised at FL330.

3.5.2 Departures

Not applicable.

3.6 Flights from München ACC to Karlsruhe UAC West and Central Sectors

3.6.1 Arrivals

Destination AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
LFST, LFGA, LFSB, LFJL	KPT-L608 KUNOD L608	FUE	at FL280 or below	TGO1
EDDK, EDLW, EDLA, EDKZ, EDLP, EDLI	L604 GASKA Y102/T852 TESDU	BBG	at FL300 or below (1)	FUL1
EDDK, EDLW, EDLA, EDKZ, EDLP, EDLI, EDFQ, EDDL	PILAM T843		at FL300 or below (if RFL < FL315)	
EDSB, EDDR, EDRZ	PETIX Z744 COSJE	ALB	at FL280 or below	WUR1

(1) Released for descent FL280 when passing Z94.

3.6.2 Departures

Departure AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
EDDP, EDAC	Z94- KOMIB	BBG	at FL300	WUR1
	Y231- ALAXA Y231		at FL310	
EDDE	Z94- KOMIB		at FL260	
	Y231- ALAXA Y231		at FL310	
EDDN	L604- GASKA		FL260, GASKA@	FUL1
EDDM	L604- GASKA		at FL300	
EDDM, EDMA, EDMO	Y101- AMOSA - Y101/L610 IBAGA DCT MASEK	ALB	climbing FL300, latest IBAGA/REKDI at FL300	WUR1
	Y101-INBED DCT REKDI			
EDMS	L610 INBED DCT REKDI		at FL300	
EDDM	Z714- PELOG - UM164-UTABA	FUE	at FL260 (1)	TGO1
LKKV, EDQD, EDQM	L984-SULUS-T852- TESDU	BBG	at FL260 (2)	FUL1
	L984-SULUS-L604- GASKA			
	L984- KOMIB			WUR1
	Z715- ALAXA /N869 AMOSA	ALB	at FL260 (2)	
EDDP	Y225- TAMEB -DCT	GER	2NM before TAMEB @FL260 (2)	FUL1

(1) FUE may transfer flights at higher FL, whenever possible.

(2) Flights may be revised at FL280 / FL300.

3.7 Flights from München ACC to Karlsruhe UAC East Sectors

3.7.1 Arrivals

Not applicable.

3.7.2 Departures

Departure AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
EDDE	N858 DIDGI	HAL	FL310	HVL1
EDDV, EDDG, EDVE, ETNW	Z94- GALMA -T703/M736/Z21			SAL1
EDLP, EDDK, EDDL, EDLW, EDVK	BIRKA-Z21- GALMA -N858/Z21			
	BIRKA-L602- SUVUT			
EDDB	Z115/Z117- ORTAG DCT BAMKI			
	Z207- SONDU			
EDAY, EDAZ	M736- GALMA			
EDDF, EDFE, EDFZ, ETOU	Y172- SISMI			
EDDB	Z117- MIPSI DCT KEGOS	GER		
EDDF	TAMEB DCT NEVKO DCT LASIS/GOVEN			
	TAMEB DCT NEVKO DCT GOLAT DCT EKPEK			
EDDB	M725- KOBUS	MEI		SPE1
	Z36- BEBKU			
EDAC	P31- KOBUS -M725			
EPPO	KORUP DCT/P31- KOBUS			
	L735- LUROS			
EPWR	Z348- IVDUF			
EDDC, EDAB	Z715- UNAVI -Z93/Z715	HOF		ERL1
	T843- RONTU			
EDBM	M736- RONIG -M736	BBG		
	Z94- RATIP -Y231			
EDDP, EDVK	M736- RONIG -M736/DCT	HOF		
EDDV, EDVE, ETNW	Y800- TADUV -Z21-OSTRA	GER		SAL1
EDDE	Z21- RISVA	MEI		SPE1
	L620- EKPEK			
LKPR, LKKB, LKVO	Y621- GARKI			
LKPD, LKCV, LKHK, LKCS	M725- KOBUS			

Departure AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
LKPR, LKKB, LKVO, LKCV, LKHK, LKPD, LKCS	M748-REND0	MEI	FL310	SPE1
LKPR, LKKB, LKVO, LKCS, EDDC	L602-SODRO	HOF		SAL1
LKKV	L602-SODRO			MEI
	L132-ABKIS-L132	SAL1		
EDDN, ETIC, EDQD, EDQM, EDQC, EDQK, EDQT, EDQG, EDQA	L132-ABKIS-L132			GER
EDDF, ETOU, EDFE, EDQG, ETHN, ETAR	L984-KULOK	HOF		ERL1
	Z650-NOGRA			
EDDS, EDSB, EDTY, EDVK	Z715-KULOK			
	Z650-NOGRA			
EDDM, EDMO, EDMA, EDMS, ETSI, ETSN	Y102-ALAXA	BBG		
	M726-LONLI			
EDJA	M726-LONLI			
	Z715-ERETO- Z715/Z650			
EDMO	Z109-BAMAS- Z109/L604	HOF		
LKPR, LKKB, LKVO, LKCS	L984-KULOK-Z715- ERETO			
	Z93-UNAVI			
	T843-RONTU			
EDDF, EDFE, LSZH, EDDS, EDSB, EDTY, EDDM	Z715(L132)-ABKIS- L132	MEI	SPE1	
EDDF, ETOU, EDFM, EDDS, EDSB, EDTY, LSZH	M726-OKKOC	GER	SAL1	
EDDM	Z109-BAMKI			

3.8 Flights from München ACC to Karlsruhe UAC South Sectors

3.8.1 Departures

Departure AD	Route of Flight and ACT COP (bold)	Transferring Sector	Entry Conditions	Accepting Sector
LIPB	M726 KOGOL	STA	FL310	CHI1
	P66 KPT	FUE		ALP1
LOWI	L608 KPT			ISA1
LOWI	M726 MAH	NDG		
LOWS	L610 MAMOR	RDG		DON1
	L604 RUDNO / NENUM DCT RUDNO			ALP1
	L856 KPT	FUE		
LOWL	L856 KONIN	STA		CHI1
	L610 MAMOR	RDG		DON1
	L604 RUDNO			ISA1
EDDS, EDTY	Z98 WLD Z98	NDG		ISA1
EDDF, EDSB, ETAR, EDF*, EDG*, EDDR, EDRZ, EDRY	Z98 -> L605/Y161 REDVO	NDG		ISA1
EDDF	L603 BESNI L605			EGG
	MIQ DCT ALUTU DCT BIBAG (slow climber)	ALP1		
ETAR, EDSB, LFST, EDDS	N871 MADEB N871/N606	ZUG		CHI1
	L607 BEMKI	FUE		
EDDS, EDDN,EDTY, EDQD, EDQM, EDQC, EDQK, EDQT, EDQG, EDQA	L173/L603 ROTAX	TRU		DON1
	M867 TAKEX			
	M736 MANAL	EGG		
EDQD, EDQM, EDQC, EDQK, EDQT, EDQG, EDQA	L604 LALIN	EGG		ALP1
EDAC, EDDE	M736 RUDNO	RDG		DON1
LKPR, LKPD, LKKB, LKKV, LKVO	P31 BAMTA	EGG		ALP1
	RUDAP DCT MAMOR	RDG		
LFSB, LSZB, LSZC, LSZG, LSZS, LSMA, LSME	N871 MADEB N871/N606	ZUG		CHI1
EDJA, EDNY, LSZR, LSZH	L725 ZUREX	TRU		CHI1
	N871 ATLOL			

LSZH	N871 SUGIB	STA		ALP1
	Z2 TUNUM	TEG		

4 Special Procedures

- 4.1.1 The following tactical directs may be used without prior coordination provided those waypoints are on FPL route and traffic remains clear of adjacent sectors/centers:

Transferring sector (unit)	Waypoint
BBG (EDMM)	HLZ, KUMER, ABGUS, ZUCKA
HAL/GER (EDMM)	HLZ, KUMER, ZUCKA
HOF (EDMM)	VEMUT, OKG, KATCE
MEI (EDMM)	OMELO, MAREM, HDO
SAL (EDUU)	SODRO, LALUK, LASIS
SPE (EDUU)	LALUK, LASIS
FUL (EDUU)	TAMEB

4.2 Enroute Traffic

- 4.2.1 Traffic between München ACC and Karlsruhe UAC sector TGO along L608 may be cleared from ERKIR/MANAL direct TEDGO.

4.3 Departures

- 4.3.1 Routing ERMEL – Y101 – INBED

WUR1 accepts these flights climbing max. FL300 to be latest IBAGA/REKDI at level.

Departures EDMM FIR may be cleared direct IBAGA/REKDI by ALB sector.

Departures EDMM FIR are released by ALB sector

- for climb to FL310 and
- for turns passing/reaching FL300 or INBED/abeam INBED whichever is earlier.

- 4.3.2 Departures EDDN and EDDM L604-MASEK are released for climb from BBG.

4.4 Arrivals

- 4.4.1 Arrivals EDDP via FEDZA-T957 are released from FUL.

- 4.4.2 Sector ALP may clear flights direct TIRUL and BERAS.

4.5 Flights on transit

Flights via OTT-L173-EBEDA are released for turn from München ACC to CHI sector after passing OTT/abeam OTT.

Departures LSZH via Z2 XEBIX are accepted

- DCT KOGOL by ALP and CHI sector,
- DCT BIRGI, GEDSO or UMVEG by ALP sector.

Arrivals EDSB, LSZS, EDFM, ETAR, EDTD, EDTL and EDRY via P66 are accepted DCT KPT.

5 Transfer of Control and Transfer of Communication

5.1 Transfer of Control

Transfer of Control shall take place at the AoR boundary, unless otherwise specified in paragraph 3.

If the downstream sector in EuroScope is set to >.break<, the procedure 5.4 is suspended and transfer of communication can only take place after the downstream sector has assumed the flight via the appropriate function of the radar client.

If it becomes necessary to reduce or suspend transfers, a 5 minute prior notification is required.

When transfers are suspended, the hand-off procedure (5.4) is suspended.

5.2 Silent transfer of control

The following values for silent transfer of control apply:

- If succeeding aircraft is not faster: 10 NM
- If succeeding aircraft is faster by 20kts/M0.05 or less: 20 NM
- If succeeding aircraft is faster by 40kts/M0.1 or less: 30 NM

5.3 Conditions for vertical entries

Silent radar transfer of vertical entries shall be carried out according to the conditions listed in Chapter 3.

5.4 Transfer of Communications

Transfer of Communications shall take place no later than Transfer of Control.

5.5 Hand-Off procedure

Unless otherwise agreed between stations online, the following hand-off procedure shall apply:

1. The upstream sector sends the aircraft to the frequency of the downstream sector by voice or text.
2. The upstream sector initiates a transfer via the appropriate function of the radar client.
3. Upon initial call the downstream sector assumes the flight via the appropriate function of the radar client.

5.6 SSR Code Assignment

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