EUROCONTROL

EXPERIMENTAL CENTRE

FACILITY SPECIFICATION

S08-ANT-RVSM
(The 3rd Continental RVSM Simulation)

PART 1 - CONDUCT

Version 2

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ANNEXES

APPROVAL (Parts 1,2 and 3)

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CHANGE RECORD

ISSUE	DATE	CHAPTER	DESCRIPTION OF CHANGES
A		All	Draft
1	4 Sep 96		Version1
2	18 Nov 96		Version 2 (Objectives) + Small amendments

DISTRIBUTION LIST	
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ACRONYMS AND ABBREVIATIONS

AB	Action Button
ATC	Air Traffic Control
EATCHIP	European Air Traffic Control Harmonisation and Implementation Program
EEC	EUROCONTROL Experimental Centre
CHI	Computer Human Interface
CFL	Cleared Flight Level
CWP	Controller Working Position
DC	Double Click
DSR	Display System Replacement
EFL	Entry Flight Level
EMM	EUROCONTROL Management Meeting
ERL	Extended Radar Label
HF	Human Factors
HMI	Human Machine Interaction
IB	Information Button
Nm	Nautical Mile
PVD	Plan View Display
ORA	Operational Research and Analysis
P&H	Press and Hold
QA	Quality Assurance
REL	Release
RIP	Reprint of a Strip
RTO	Real Time Operations
SC	Single Click
SED	Simulation Exploitation and Development
SIM5+	The current Brétigny simulator
SMG	Simulation Management Group
SNAP	System de Navigation Approximatif (stand alone navigation facility)
STC	Simulation Technical Co-ordinator
WMB	Window Management Button
XFL	eXit Flight Level

In order to ensure clarity and readability, the following conventions are applied in this document:

“shall”	used whenever a mandatory requirement is expressed.
“should”	used in order to express a recommendation.
“may”	used in order to express an option.
“will”	used in order to express the future.

1. FACILITY SPECIFICATION

1.1 FACILITY SPECIFICATION DEFINITION

(1) The Facility Specification is the EEC description of the operational, analysis and technical requirements to be met by the simulation environment in support of the S08 ANT-RVSM Real Time Simulation.

1.2 SCOPE

(1) The scope of the Facility Specification includes all facilities and procedures to be used in the S08 Simulation.

1.3 DATA COLLECTION

(1) The information provided in this document has been collected and collated from joint discussion and documentation provided by the RVSM (Ops) Task Force and the participating ATC Centres, and from the AR34 real time simulation technical specification.

1.4 THE DOCUMENT

(1) The Facility Specification will be issued as three documents, conduct, analysis and technical, representing the full project requirements. It shall be subject to a critical review by the Head of RTO, Head of SED, SEU and Software Project Leader. The document shall be subject to acceptance by the RVSM (Ops) Task Force and EEC Project Co-ordinators.

1.5 EEC PROJECT NUMBER, TITLE, CLIENT AND SPONSOR.

(1) The EEC Project Number shall be S08.

(2) The Project Title shall be ANT-RVSM.

(3) The Simulation client shall be the RVSM (Ops) Task Force (ANT)

(4) The Simulation Sponsor shall be EUROCONTROL.

1.6 RELATED DOCUMENTS

(1) Documents related to the project include :

- S08 Project Plan
- Client Operational Specification
- S08 Facility Specification Parts 1, 2 and 3
- S08 Controller Notes

2. INTRODUCTION

2.1 CONTEXT

(1) Since 1960 the commercial use of flight levels above FL290 has been restricted to 2000 foot intervals in order to provide safe separation standards between aircraft. The use of 1000 feet above FL290 was considered unsafe based mainly upon aircraft altimetry equipment. The current growth of air traffic using levels above FL290 has increased the demand for the use of FL300, 320, 340, 360, 380, and 400 especially in overloaded airspace such as the North Atlantic and Central Europe.

(2) Modern aircraft equipment can now be built and maintained to a specification that would enable the reduction of separation above FL290 to 1000 feet with certain conditions. These conditions state that the aircraft utilising the reduced separation are MASPS equipped, new operational procedures are established and a comprehensive means of monitoring the safe operation of the system is provided.

(3) As part of EATCHIP the RVSM (OPS) Task Force (commissioned by the ANT) has been tasked to address the operational issues relating to the introduction of RVSM in the ECAC area.

2.2 SIMULATION OBJECTIVES

GENERAL OBJECTIVES

A. To gain additional comparative results between the single and double alternate RVSM Flight Level Orientation Schemes within a multi-ATC Centre European core area environment.

B. To confirm the suitability of the double alternate FLOS (as recommended by the RVSM OPS Task Force and as a result of previous RVSM simulations) within a multi-ATC Centre European core area environment.

C. To quantify the benefits of RVSM for the ATM system in the ECAC area.

SPECIFIC OBJECTIVES

1. To further evaluate the operational advantages and disadvantages associated with the strategic use of RVSM in the single and double FLOS against the CVSM reference.

2. To compare the controller workload and sector throughput between the RVSM reference traffic samples and 2 traffic samples with a higher traffic level using the double alternate FLOS.

3. To validate the proposed general ATC procedures as developed by the ATM Procedures Development Sub-Group (including ATC procedures to accommodate Non-MASPS State Aircraft) required for RVSM implementation using the double FLOS.

4. To validate the proposed ATC contingency procedures based upon pre-described ATC contingency situations.

5. To determine the operational impact of a new vertical sector division FL345 within the Reims sectors UE and UH using the double FLOS.

Supprimé : Task Force

Supprimé : other

Supprimé : <#>.¶

Supprimé : the integration of

Supprimé : developed by the APDSG

Supprimé : the

2.3 PROJECT MANAGEMENT

(1) Project Management, deliverables and responsibilities are described in the S08 Project Plan.

3. SIMULATION ENVIRONMENT

3.1 INTRODUCTION

(1) This chapter outlines the static (ATC environment) data preparation for the S08 simulation.

3.2 SIMULATION AREA

(1) The simulation area shall include centres from France, Germany and Switzerland. The Simulation window will be between the following co-ordinates.

- 5050N
- 4400N
- 0320E
- 1200E

The Centre of the window will be 4725N - 0740E

3.3 CONTROL POSITIONS

(1) The **10 Measured** sectors shall be :

SECTOR NAME	ATC CENTRE	FREQUENCY	SECTOR NUMBER	PILOT NUMBER
GE4	GENEVA	133.15	9+19	1+2
GE6	GENEVA	128.15	10+20	3
SOL	KARLSRUHE	120.92	5+15	7+8
TAN	KARLSRUHE	132.4	6+16	9
UE / AE	REIMS	132.5	3+13	13
UF / YE	REIMS	132.27	2+12	14
UH / AH	REIMS	134.4	4+14	11+12
MIL	LYON	317.5	1+11	10
ZU2	ZURICH	134.6	7+17	4+5
ZU3	ZURICH	133.4	8+18	6
			Number in brackets indicates console closed at the start of the exercise	

(1) The **Feed** sectors shall be :

SECTOR NAME	CONTROLLING CENTRE	FREQUENCY	SECTOR NUMBER	PILOT NUMBER
REIMS	REIMS	133.82	22	19+20
RHEIN	MUNICH	127.37	21	17+18

AIX	GENEVA	125.85	23	16
MILAN	ZURICH	134.52	24	15

(1) A maximum of 4 feed positions shall be developed to assure continuity of control and co-ordination to the measured positions. The control actions of these positions shall be kept to a minimum.

(2) The primary feed task shall be to respond to inbound co-ordination requests and to instruct the pilots according to the co-ordination requests.

3.4 CONSOLE DEFAULT SETTINGS

(1)

SECTOR NAME	REFERENCE POINT	RANGE Nm (DIAMETER)	LOWER LIMIT	UPPER LIMIT
GE4	4610N / 0637E	175	285	345
GE6	4610N / 0637E	175	345	460
SOL	4845N / 0830E	160	195	460
TAN	4850N / 0905E	160	195	460
UE (ORG 1)	4845N / 0607E	150	195	460
UF (ORG 1)	4745N / 0530E	105	195	460
UH (ORG 1)	4738N / 0624E	120	195	460
AE (ORG 2)	4845N / 0607E	150	195	345
AH (ORG 2)	4738N / 0624E	120	195	345
YE (ORG 2)	4811N / 0604E	125	345	460
MIL	4720N / 0640E	270	195	460
ZU2	4714N / 0833E (ALBIX)	180	285	345
ZU3	4714N / 0833E (ALBIX)	180	345	460
REIMS	4822N / 0631E (RAMBE)	190	000	460
RHEIN	4908N / 1014E (DKB)	200	000	460
AIX	4530N / 0600E	190	000	460
MILAN	4533N / 0930E (TZO)	220	000	460

3.5 STATIC DATA

(1) 2 static files shall be defined

(2) ATC constraints shall be detailed in the static to define aircraft trajectories. A list of constraints is provided in Annex C.

(3) The static name shall be S1and S2

3.6 VIDEO MAP DATA

(1) One video map static shall be defined to cover all organisations.

(2) The video static name shall be SV

3.7 ORGANISATIONS

(1) 2 organisations will be defined as follows

(2)

ORG	TRAFFIC	ROUTES	MEASURED SECTORS	FEED SECTORS
1	96+35% 96+55% 96+65%	96 with new ARN	GE4,GE6 SOL, TAN **UE, UF,UH**,F.Mil, ZU2,ZU3	RHEIN REIMS MILAN AIX
2	96+35% 96+55% 96+65%	96 with new ARN	GE4,GE6 SOL, TAN **AE, AH, YE** ,F.Mil, ZU2,ZU3	RHEIN REIMS MILAN AIX

3.8 CHANGES TO ORGANISATIONS

(1) It is accepted that, due to exceptional circumstances, organisations may require modification. Following the publication of the Facility Specification the Project Leader reserves the right to refuse such changes if, in his judgement, the changes would detrimental to the successful completion of the project.

3.9 ATC WORKING PROCEDURES

(1) The ATC working procedures to be used during the simulation will be in accordance with current Letters of Agreement and/or particular Operational Instructions (with the exception of French civil/military co-ordination) described for each scenario and provided by the ATC centres involved.

(2) If during the simulation it appears necessary to amend or introduce new procedures then this will be done with the agreement of all participants. Such changes shall be documented and will form part of the final simulation report.

3.10 FRENCH CIVIL - MILITARY CO-ORDINATION PROCEDURES

(1) The following procedures will apply only for the period of the simulation.

(2) The prevention of collisions is always the responsibility of the military controller.

(3) During periods of busy traffic a request for co-ordination may be refused by either the civilian or military controller.

(4) For military flights crossing civil routes co-ordination shall be initiated by the military controller by telephone. The military controller will give the position and callsign of his traffic and the civil traffic and the suggested course of action. The civil controller will then either agree or suggest an alternative solution.

(5) A civil controller may request co-ordination to enter a military area, provided that 2 minutes warning is given and the subject aircraft and it's intentions are pointed out to the military controller. The military controller will then either agree or suggest an alternative solution.

3.11 MILITARY AREAS

(1) The French Military areas C20 and C22 will be simulated as active during Organisation 1. A French Military controller will operate within these areas and will control Military traffic crossing civil routes en-route to these areas.

(2) The Swiss Military areas (Hoch NW,W,NE,E and Central) will be simulated as active during Organisation 1, there will however be no military tracks displayed within these areas.

(3) The DFS Military areas R305A and B will be considered as permanently active during the simulation.

(4) The co-ordinates for the military areas are defined in **PART 3: 23.8.1**.

3.12 ROOM LAYOUT

(1) The room layouts (Operations and Pilots) are described in **Annex A**.

3.13 TELECOMMUNICATIONS

(1) All control positions will be provided with a Frequentis touch panel. The telecomm matrix is described in **Annex B**.

4. PRE-SIMULATION TRAINING

4.1 STRATEGY

(1) In order to minimise the controller training at the EEC (thus allowing more time to be allocated to measured exercises) a pre-simulation package will be devised jointly between the client and the EEC and distributed before the simulation .

(2) This will comprise of a Controllers Handbook and teachware involving CBT and CWP training.

(3) Training is essential to ensure that controllers have a complete understanding of the Simulation Facility in order to assure the quality of measured exercises.

(4) The first day of the simulation will be allocated for an arrival briefing and 3 training exercises to familiarise the controllers with the simulation facility.

4.2 PRE SIMULATION TRAINING COURSE

(1) The pre-simulation training package will include the following topics:-

- Introduction to the Simulation and to the EEC.
- Controllers Instruction book
- CBT diskettes.

4.3 COMPUTER BASED TRAINING (CBT)

(1) The computer based training package will cover the following topics:-

- Operational Display System
- Touch Input Device
- Telecomms Panel

The CBT will be created using Word Perfect presentations Slide Show and will be graphics and text (English) based.

4.4 CONTROLLER WORKING POSITION - CWP

(1) Full details of the CWP and number of CWP required appear in the Technical specification (Part 3)

5. STAFF REQUIREMENTS

5.1 DATA VALIDATION

(1) Data validation is planned to take place from **11-13 September and 13-15 November 96**

(2) The staffing requirement shall be :

ATC CENTRE	PERSONNEL REQUIRED
Brussels	1
Geneva	1
Karlsruhe	1
Reims	1
Zurich	1
Lyon	1

5.2 OPERATIONAL ACCEPTANCE

(1) Operational acceptance is planned to take place from **6 - 10 January 97**. The minimum staffing requirement will be :

ATC CENTRE	PERSONNEL REQUIRED
Brussels	1
Geneva	2
Karlsruhe	2
Reims	3
Zurich	2
Lyon	1+1 Pilot

5.3 SIMULATION

(1) The staff requirement for the simulation **20 January - 14 February 97** will be as follows :

ATC CENTRE	PERSONNEL REQUIRED
Brussels	1 Supervisor
Geneva	5 Controllers - 1 Supervisor
Karlsruhe	4 Controllers - 1 Supervisor
Frankfurt (ex KRH)	1 Controller
Reims	7 Controllers - 1 Supervisor
Zurich	5 Controllers
Lyon	2 Controllers - 1 Supervisor + 1 Pilot

5.4 EEC Staff Requirement

(1) The EEC staff requirement for the simulation will be as follows :

- Project Leader
- Simulation Technical Co-ordinator (STC)
- Deputy Project Leader
- Simulation Analyst
- Operations Room Supervisor
- Simulation Operator
- Pilot Operators

5.5 SIMULATION PROGRAMME

5.5.1 Daily Programme

(1) Three exercises will be run each day. Controllers are expected to be present at 0845 in the control room ready for exercise start at 0900. A typical daily schedule will be :

0900 to 1030	First exercise	1400 to 1530	Third exercise
1030 to 1100	Coffee break	1530 to 1630	Debrief
1100 to 1230	Second exercise		
1230 to 1400	Lunch	(Times subject to Change)	

5.6 LUNCH AND COFFEE FACILITIES

(1) A coffee shop is located close to the simulation room and is open during coffee break and at lunch time (coffee and tea are free).

(2) The EEC shares canteen facilities with an adjacent Company (CGA). A three course meal can be obtained for approximately 40 FFR.

(3) This canteen operates on a point basis; each meal costing X points. The points will be deducted from an account card by the cashier. Each participant will be provided with an account card at the beginning of the simulation. Points can be bought at the first lunch (suggested purchase points worth a value of 100 FFR at the first meal). Prior to leaving the EEC (at the end of the simulation) the outstanding cash left on the card can be collected from the cashier after 1300 hours.

(4) For those who do not wish to use the canteen facilities there is a drinks and sandwich machine beside the coffee shop (filled with fresh sandwiches on a daily basis).

(5) Fresh sandwiches can be ordered from a local Sandwich Bar.

5.7 DEBRIEFING ROOM ALLOCATION

(1) Arrival briefing and final presentation

Room **63/66/67 (**Main building)

(1) Exercise Debriefing

Room **AE04** (new building)

5.8 EXERCISE SCHEDULE

(1) The simulation will run over four weeks. The exercises available shall be

Date	START	STOP	SCENARIO/ACTIVITY	TRAFFIC CODE
WEEK 1				
MON 20 JAN	0915	1030	INTRODUCTION TO S08 AND THE EEC	
	1100	1200	Training exercise	TTNG
	1400	1515	Training exercise	TTNG
	1515	1630	Training exercise	TTNG
TUE 21 JAN	0900	1030	Exercise 1 - **ORG 1**	T1M35R
	1100	1230	Exercise 2	T1A35R
	1400	1530	Exercise 3	T1M35R
	1545	1630	Debrief	
WED 22 JAN	0900	1030	Exercise 1	T1A35S
	1100	1230	Exercise 2	T1M35S
	1400	1530	Exercise 3	T1A35S
	1545	1630	Debrief	
THU 23 JAN	0900	1030	Exercise 1	T1M35D
	1100	1230	Exercise 2	T1A35D
	1400	1530	Exercise 3	T1M35D
	1545	1630	Debrief	
FRI 24 JAN	0900	1030	Exercise 1	T1A35R
	1100	1230	Exercise 2	T1M35R
	1400	1530	Exercise 3	T1A35R
	1545	1630	Debrief	

WEEK 2				
MON 27 JAN	0900	1030	Exercise 1	T1A35D
	1100	1230	Exercise 2	T1M35D
	1400	1530	Exercise 3	T1A35D
	1545	1630	Debrief	
TUE 28 JAN	0900	1030	Exercise 1	T1M35S
	1100	1230	Exercise 2	T1A35S
	1330	1500	Exercise 3	T1M35S
	1500	1630	Debrief (End of 35% traffic)	
WED 29 JAN	0900	1030	Exercise 1	T1A55D
	1100	1230	Exercise 2	T1M55D
	1400	1530	Exercise 3	T1A55D
	1545	1630	Debrief	
THU 30 JAN	0900	1030	Exercise 1 - Single A/C with Problem	T1M55D/35
	1100	1230	Exercise 2 - Turbulence Forecast	T1A55D/35
	1400	1530	Exercise 3 - Instant Turbulence	T1M55D/35
	1545	1630	Debrief	
FRI 31 JAN	0900	1030	Exercise 1	Spare
	1100	1230	Exercise 2	Spare
	1400	1530	Exercise 3	Spare
	1545	1630	Debrief	

WEEK 3				
MON 3 FEB	0900	1030	Exercise 1	TTNG
	1100	1230	Exercise 2 - **ORG 2**	T2A35D
	1400	1530	Exercise 3	T2M35D
	1545	1630	Debrief	
TUE 4 FEB	0900	1030	Exercise 1	T2A35D
	1100	1230	Exercise 2	T2M35D
	1400	1530	Exercise 3	T2A55D
	1545	1630	Debrief	
WED 5 FEB	0900	1030	Exercise 1	T2M55D
	1100	1230	Exercise 2	T2A55D
	1400	1530	Exercise 3	T2M55D
	1545	1630	Debrief	
THU 6 FEB	0900	1030	Exercise 1- **ORG 1**	T1M55D
	1100	1230	Exercise 2	T1A55D
	1400	1530	Exercise 3	T1M55D
	1545	1630	Debrief	
FRI 7 FEB	0900	1030	Exercise 1	T1A65D
	1100	1230	Exercise 2	T1M65D
	1400	1530	Exercise 3	T1A65D
	1545	1630	Debrief	

WEEK 4				
MON 10 FEB	0900	1030	Exercise 1	T1M65D
	1100	1230	Exercise 2	T1A65D
	1400	1530	Exercise 3	T1M65D
	1545	1630	Debrief	
TUE 11 FEB	0900	1030	Exercise 1	TBD
	1100	1230	Exercise 2	TBD
	1400	1530	Exercise 3	TBD
	1545	1630	Debrief	
WED 12 FEB	0900	1030	Exercise 1- Single A/C with Problem	T1A55D/35
	1100	1230	Exercise 2- Turbulence Forecast	T1M55D/35
	1400	1530	Exercise 3- Instant Turbulence	T1A55D/35
	1545	1630	Debrief	
THU 13 FEB	0900	1030	Exercise 1	Spare
	1100	1230	Exercise 2	Spare
	1400	1530	Exercise 3	Spare
	1545	1630	Debrief	
FRI 14 FEB	0900	1545	Debrief and Results	
		1600	Depart	

The exercise schedule is a draft version only. In order to meet the objectives of the simulation the Project Leader may change the schedule after consultation with the Project Team.

6. TRAFFIC SAMPLES

6.1 CREATION

(1) The traffic samples will be created at the EEC. They will be based upon 2 sets of traffic recordings from Friday 24th May 96 (0430Z-0730Z & 1430Z-1730Z) supplied by SCTA, Swisscontrol, DIRCAM and DFS in MS Excel format. The samples will then be adjusted to include conflicting traffic situations within the measured sectors and to represent a workload equivalent to the present published sector capacity + 35%-55%-65%.

The table below details sector capacity (number of aircraft per hour). Some sectors have " + number " next to the capacity, this is a figure deemed to be necessary by the Project Leader to enable a sector workload to be reached so that the objectives can be achieved. *The figures below are a guide only and the capacity in some sectors may vary from the target figure.*

SECTOR	1996 DECLARED CAPACITY	1996+35%	1996+55%	1996+65%
GE4	35	47	54	57
GE6	28 + 5	44	51	54
SOL	54	73	83	89
TAN	41	55	63	68
UE	30 +8	51	59	63
UF	26 + 8	46	53	56
UH	33 + 8	55	63	67
MIL	3-4 Tracks per controller on frequency	3	4	5
ZU2	29 + 5	46	53	56
ZU3	32 + 5	50	57	61

6.2 TRAINING SAMPLE

(1) A training sample will be developed to cater for initial training (equipment familiarisation). This shall be developed from one of the main samples but shall be "reduced" so as not to overload the controllers during the familiarisation phase.

The training sample name shall be :

- TTNG

6.3 TOTAL TRAFFIC SAMPLE REQUIREMENT

(1) The 21 traffic samples to be used during the simulation will be :

Name	No. A/c	Measured Hour	Peak	Name	No. A/c	Measured Hour	Peak
T1M35R		0600-0700		TTNG		not measured	
T1A35R		1500-1600					
T1M35D		0600-0700		T1M35S		0600-0700	
T1A35D		1500-1600		T1A35S		1500-1600	
T1M55D		0600-0700		T1M55S		0600-0700	
T1A55D		1500-1600		T1A55S		1500-1600	
T1M65D		0600-0700		T1M65S		0600-0700	
T1A65D		1500-1600		T1A65S		1500-1600	
T2M35D		0600-0700					
T2A35D		1500-1600					
T2M55D		0600-0700					
T2A55D		1500-1600					
T2M65D		0600-0700					
T2A65D		1500-1600					
T2M65S		0600-0700					
T2A65S		1500-1600					
Total =14				**Total =7**			

(2) Traffic sample data decode

Traffic sample data is displayed by an orderly group of letters/numbers e.g. **T**

T	=	Traffic
TNG	=	Training
R	=	Reference (CSM)
1	=	Org 1
2	=	Org 2
S	=	Single Alternate
D	=	Double Alternate
A	=	Afternoon
M	=	Morning
35	=	35% Load
55	=	55% Load
65	=	65% Load

7. PAPER MAPS

(1) Paper maps shall be provided for documentation and presentation purposes.

(2) Documentation Maps shall be size A4 and presentation maps size A3/A2.

(3) There will be 3 different Maps for each Organisation

- General Layout (Code = **G**)
- Controllers Map (Code = **C**)
- Pilots Map (Code =**P**)

(4) The General Map shall contain

- **S08 ANT-RVSM** and Organisation number
- ATCC Centre names
- Sector boundaries and Names
- Military Areas

(5) The Controller Map shall contain the following information.

- **S08 ANT-RVSM** and Organisation number
- Sector boundaries and Names
- Sector Upper and lower limits
- Routes
- Beacons and names (As found on the Video Map)
- Sector Frequencies
- Military Areas

(6) Each Map shall contain the following information.

- **S08 ANT-RVSM** and Organisation number
- Sector boundaries and Names
- Sector Upper and lower limits
- Routes
- Beacons and names (All beacons used on Flight plans)
- Sector Frequencies
- Military Areas

(7) The following tables details the distribution of Maps (FS=Facility Spec, CB=Controllers Handbook, PB=Pilot Handbook and VB=Visitors Handbook.)

ORG 1	Paper Size	Number Required
Measured Sectors	A3	20-**C**
Feed Sectors	A3	4-**C**
Pilots Room	A3	20-**P**
Briefing Board	A2	2-**G**
	A3	2-**C**
Documentation	A4	FS=25-**G** FS=25-**C** CB=35-**G** CB=35-**C** PB=25-**G** PB=25-**P** VB=20-**G** VB=20-**C**

ORG 2	Paper Size	Number Required
Measured Sectors	A3	20-**C**
Feed Sectors	A3	4-**C**
Pilots Room	A3	20-**P**
Briefing Board	A2	2-**G**
	A3	2-**C**
Documentation	A4	FS=25-**G** FS=25-**C** CB=35-**G** CB=35-**C** PB=25-**G** PB=25-**P** VB=20-**G** VB=20-**C**

8. SUPPLEMENTARY REQUIREMENTS

8.1 MULTI aircraft COCKPIT SIMULATOR (MCS)

(1) Multi aircraft Cockpit Simulator (MCS) will be available for use by Airline pilots to take part during the simulation to enable feed back from real pilots as well as controllers.

(2) The MCS will be manned when staff permits and will run in parallel to the normal pilot positions. There will be 2 flights per exercise assigned to the MCS.

8.2 OFFICE FACILITIES

(1) The EEC shall provide the RVSM Ops Task Force Team with office facilities including at least one PC fully configured to EEC standards with access to the network and E-mail.

(2) The office requirement is for one person from 20 January 97 to 14 February 97.

8.3 SCREEN DUMPS

(1) A screen dump facility shall be provided during simulation exercises.

8.4 VISITORS

(1) Handout documentation for visitors shall be provided. This shall be jointly prepared by the EEC and RVSM Ops Task Force.

9. SIMULATION ANALYSIS AND REPORTING

9.1 SIMULATION ANALYSIS

(1) Simulation Analysis is detailed in part 2 of the facility specification.

9.2 FINAL REPORT

(1) The EEC shall issue the Final Report.

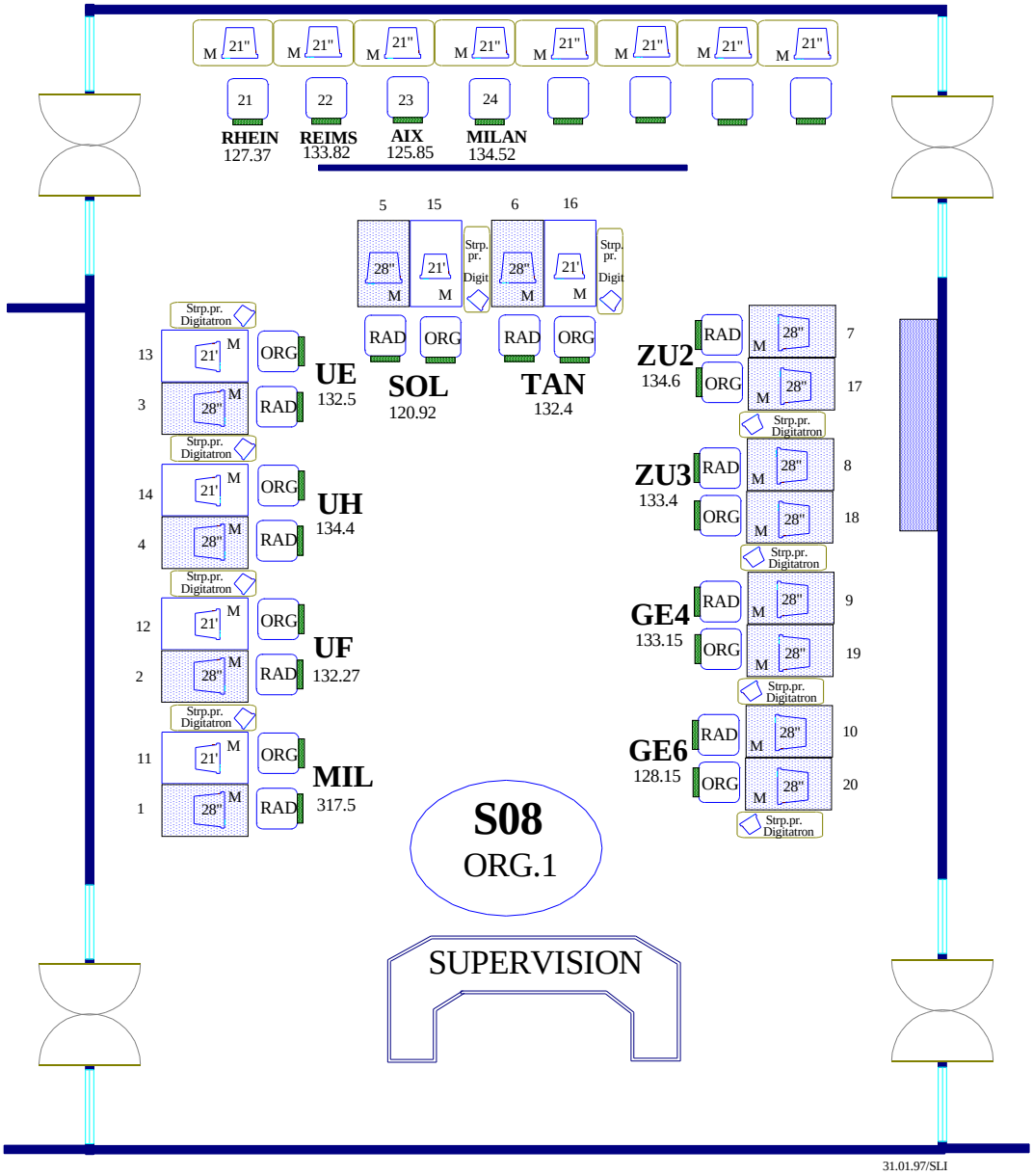
(2) A report review shall be required before the final report is published.

(3) The report and analysis schedule is detailed in the project plan.

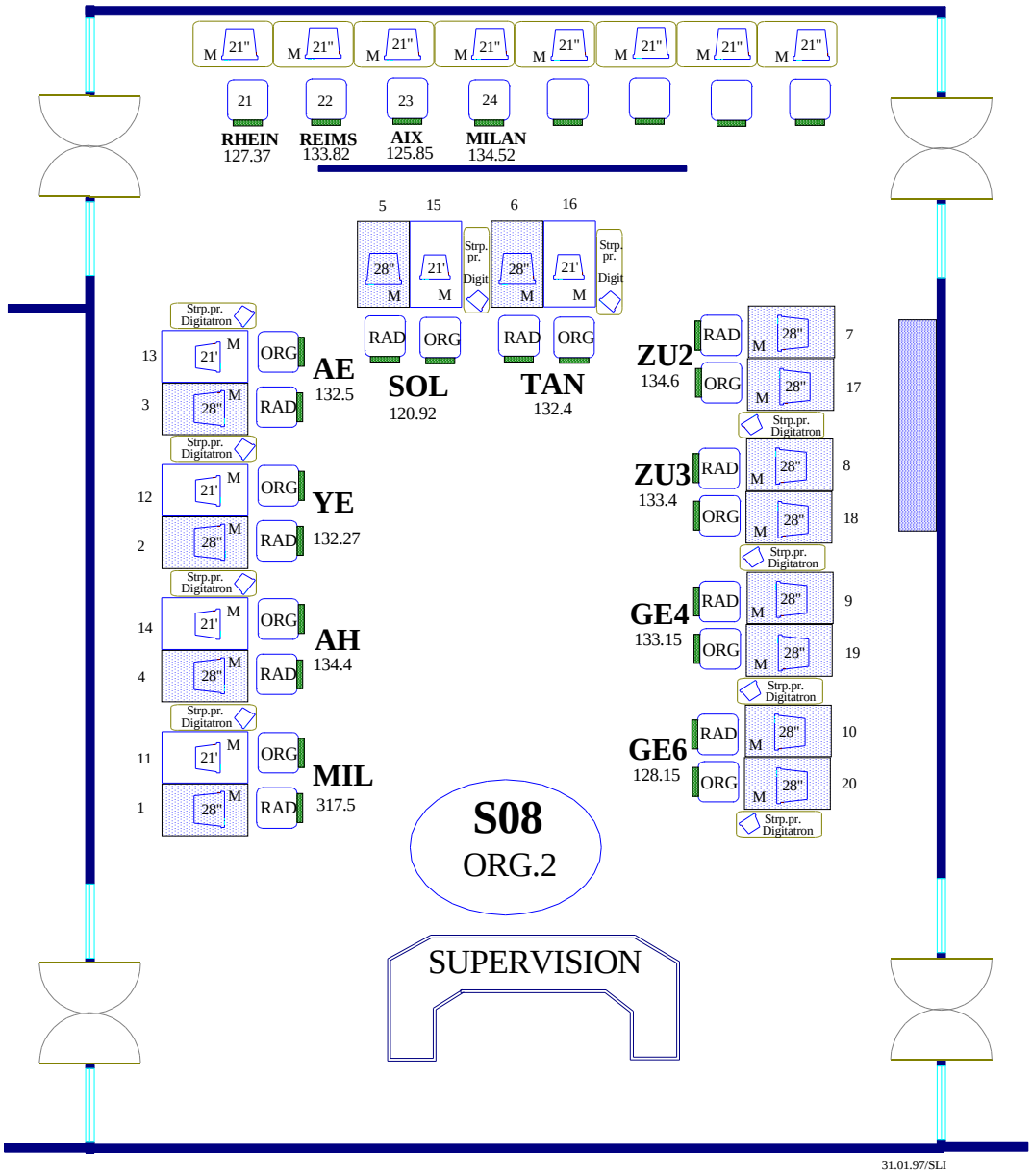
9.3 DISSEMINATION OF RESULTS

(1) An agreed report distribution shall be defined by the RVSM Ops Task Force and EEC.

OPERATIONS ROOM LAYOUT ORG 1

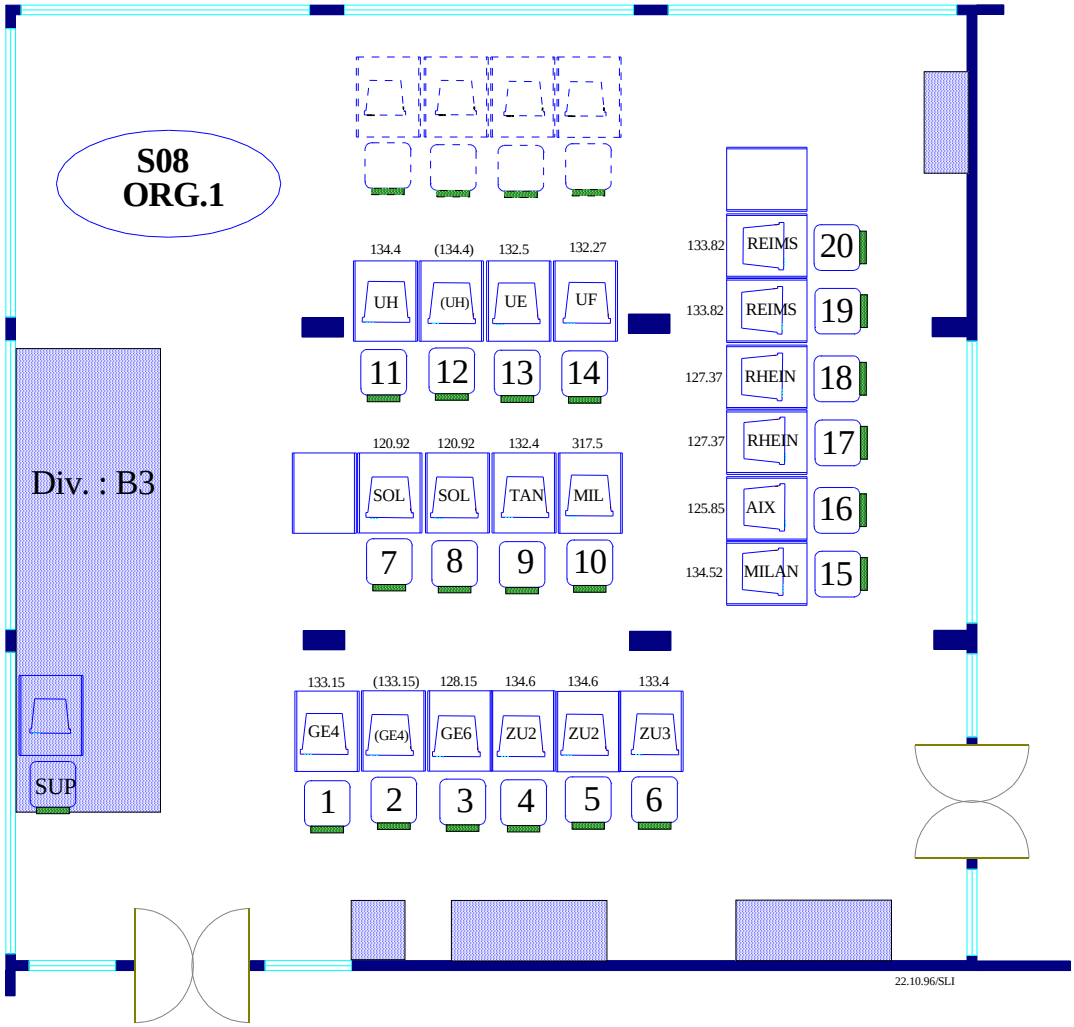


OPERATIONS ROOM LAYOUT ORG 2

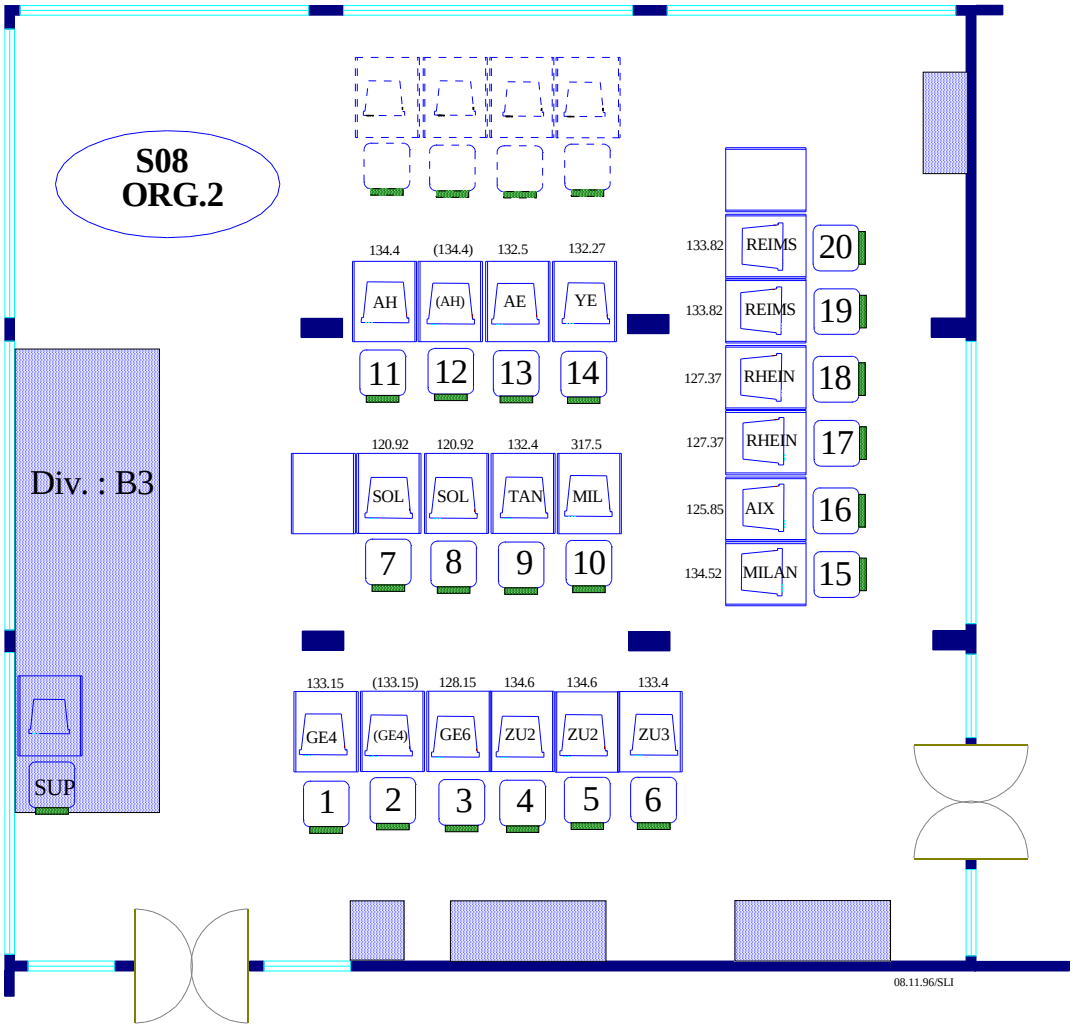


31.01.97/SLI

PILOTS ROOM LAYOUT ORG 1



PILOTS ROOM LAYOUT ORG 2



ATC CONSTRAINTS VALUES

ATC Constraints shall be used to define aircraft trajectory calculation (profile). The profile determines the sector sequence.

ATC Constraints shall also used to determine EFL/XFL values. These values shall be used to indicate the EFL and XFL in the respective boxes on the flight strip according to sector transition requirements.

The table below defines the ATC Constraint requirements. It is likely that these constraints shall be altered during the course of the simulation.

ANNEX A

ROOM LAYOUTS
(OPERATIONS & PILOTS)

ANNEX B

TELECOMMUNICATIONS LAYOUT

ANNEX C

ATC CONSTRAINTS

ANNEX D

MAP OF AIRSPACE

TELECOMM LAYOUT FOR ORG 1

SECTOR	PILOT NO.	FREQ.	MIL r	MILo	UF r	UF o	UE r	UE o	UH r	UH o	SOL r	SOL o	TAN r	TAN o	ZU2 r	ZU2 o	ZU3 r	ZU3 o	GE4 r	GE
MIL r	10	317.50			X		X		X		X				X		X		X	
MIL o	10	317.50				X		X		X		X				X		X		
UF r	14	132.27					X		X										X	
UF o	14	132.27						X		X										
UE r	13	132.50							X		X				X		X			
UE o	13	132.50								X		X				X		X		
UH r	11+12	134.40									X				X		X		X	
UH o	11+12	134.40										X				X		X		
SOL r	7+8	120.92											X		X		X			
SOL o	7+8	120.92												X		X		X		
TAN r	9	132.40													X		X			
TAN o	9	132.40														X		X		
ZU2 r	4+5	134.60															X		X	
ZU2 o	4+5	134.60																X		
ZU3 r	6	133.40																	X	
ZU3 o	6	133.40																		
GE4 r	1+2	133.15																		
GE4 o	1+2	133.15																		
GE6 r	3	128.15																		
GE6 o	3	128.15																		
RHEIN	17+18	127.37																		
REIMS	19+20	133.82																		
AIX	16	125.85																		
MILAN	15	134.52																		

TELECOMM LAYOUT FOR ORG 2

	PILOT NO.	FREQ.	MIL r	MILo	YE r	YE o	AE r	AE o	AH r	AH o	SOL r	SOL o	TAN r	TAN o	ZU2 r	ZU2 o	ZU3 r	ZU3 o	GE4 r	GI
SECTOR																				
MIL r	10	317.50			X		X		X		X				X		X		X	
MIL o	10	317.50				X		X		X		X				X		X		
YE r	14	132.27					X		X		X				X		X		X	
YE o	14	132.27						X		X		X				X		X		
AE r	13	132.50							X		X				X		X			
AE o	13	132.50								X		X				X		X		
AH r	11+12	134.40									X				X		X		X	
AH o	11+12	134.40										X				X		X		
SOL r	7+8	120.92											X		X		X			
SOL o	7+8	120.92												X		X		X		
TAN r	9	132.40													X		X			
TAN o	9	132.40														X		X		
ZU2 r	4+5	134.60															X		X	
ZU2 o	4+5	134.60																X		
ZU3 r	6	133.40																	X	
ZU3 o	6	133.40																		
GE4 r	1+2	133.15																		
GE4 o	1+2	133.15																		
GE6 r	3	128.15																		
GE6 o	3	128.15																		
RHEIN	17+18	127.37																		
REIMS	19+20	133.82																		
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