



International Civil Aviation Organization

**The Eighteenth Meeting of the ICAO RVSM Implementation Task Force
(RVSM/TF/18)**

Bangkok, Thailand, 30 June – 01 & 04 July 2003

Agenda Item 2: Review Implementation Actions

**IMPLEMENTATION OF THE REDUCED VERTICAL
SEPARATION MINIMUM (RVSM) IN THE
WESTERN PACIFIC / SOUTH CHINA SEA AREA**

(Presented by the Chairperson)

SUMMARY

This paper provides an update on the progress of RVSM implementation in the Western Pacific and South China Sea area.

1. INTRODUCTION

1.1 This Working Paper provides an update on the progress of RVSM implementation in the Western Pacific / South China Sea area, based on the list of tasks that had been developed by the ICAO RVSM Task Force.

2. ACTION BY THE MEETING

2.1 The meeting is invited to review the task list and address issues (if any) that could affect RVSM operations in the Western Pacific / South China Sea area.

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Task List

Status of the Western Pacific/South China Sea RVSM Implementation Plan Task List
[Items for the Bay of Bengal/South of the Himalayas implementation have been moved to a new Task List]

ID	Description	Start	Finish	Resource Names	Status
1	Identify Operational Need	10-Apr-00	18-Jan-02		
2	Agree on operational concept for South East Asia traffic flow	10-Apr-00	14-Sep-01	ATC/WG, RVSM Task Force	Completed
3	Conduct Cost Benefits Analysis	10-Apr-00	4-May-01		
4	Conduct preliminary benefit cost analysis	10-Apr-00	1-Sep-00	APARMO	Completed
5	Update preliminary benefit cost analysis	1-Sep-00	12-Jan-01	APARMO	Completed
6	Finalize benefit cost analysis	1-Sep-00	4-May-01	APARMO	Completed
7	Safety Assessment	10-Apr-00	30-Sep-02		
8	Review available summary data (non-compliant aircraft, aberrant aircraft etc)	10-Apr-00	1-Jan-02	SAM/WG, RVSM Task Force	Completed
9	Examine history of height keeping errors related to ATC clearances and assess possible RVSM impact	10-Apr-00	1-Jan-02	SAM/WG, RVSM Task Force	Completed
10	Confirm RVSM risk model assumptions/parameters are consistent with airspace where RVSM is to be applied	10-Apr-00	4-May-01	SAM/WG, RVSM Task Force	Completed
11	Conduct simulations to predict occupancy after RVSM implementation	1-Aug-00	4-May-01	SAM/WG, RVSM Task Force	Completed
12	Collect weather and turbulence data for analysis	10-Apr-00	31-Aug-02	SAM/WG, RVSM Task Force	Completed
13	Provide monthly reports on large height deviations to APARMO	10-Apr-00	Ongoing	ATS Providers, Users	
14	Collect traffic movement data for APARMO	1-Jan-03	31-Jan-03	ATS Providers	
15	Develop Policy and Procedures for investigation and identification of non-approved aircraft operating at RVSM FLs	1-Aug-00	4-May-01	SAM/WG, OPS/AIR/WG, ATC/WG, RVSM Task Force	Completed
16	Examine the need to conduct a safety assessment of transition areas	1-Aug-00	18-Jan-02	SAM/WG, ATC/WG	Completed
17	Examine the need to conduct a safety assessment in aircraft moving from exclusionary to non-exclusionary airspace where RVSM is applied	1-Aug-00	12-Jan-01	SAM/WG, RVSM Task Force	Completed
18	Recommend decision-making aids to support safety assessment	1-Aug-00	14-Sep-01	SAM/WG, RVSM Task Force	Completed
19	Supplement document containing detailed procedures and analyses used for safety assessment	1-Jan-01	14-Sep-01	SAM/WG, RVSM Task Force	Completed
20	Determine the overall procedure to be followed by APARMO in requesting Mode C data from monitored flights	1-Aug-00	12-Jan-01	ICAO Regional Office, RVSM Task Force	Completed
21	Prepare letter requesting establishment of process for obtaining Mode C data from ATS providers	1-Aug-00	12-Jan-01	ICAO Regional Office	Completed
22	Feasibility Analysis	10-Apr-00	25-Sep-02		
23	Examine the operational factors and workload associated with Phase I implementation	10-Apr-00	18-Jan-02	ATC/WG, RVSM Task Force	Completed
24	Examine the operational factors and workload associated with Phase II implementation	10-Apr-00	25-Sep-02	ATC/WG, RVSM Task Force	Completed
25	Determination of Requirements (airborne & ground systems)	10-Apr-00	25-Sep-02		

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26	Determine need for additional GMUs	1-Aug-00	4-May-01	SAM/WG, RVSM Task Force	Completed
27	Evaluate the feasibility of NAMS as a ground-based height monitoring unit	10-Apr-00	12-Jan-01	JCAB	Completed
28	States assess the impact of RVSM implementation on controller automation systems (e.g., equipment suffixes) and plan for upgrades/modifications	10-Apr-00	18-Jan-02	States under Phase I implementation	Completed
29	States assess the impact of RVSM implementation on controller automation systems (e.g., equipment suffixes) and plan for upgrades/modifications	10-Apr-00	25-Sep-02	States under Phase II implementation	Completed
30	Aircraft & Operator Approval Requirements	10-Apr-00	31-Oct-02		
31	Promulgate the operational approval process	10-Apr-00	31-Oct-02	OPS/AIR/WG, RVSM Task Force	Completed
32	Notify States when significant changes occur to RVSM documentation	10-Apr-00	31-Oct-02	OPS/AIR/WG, RVSM Task Force	Completed
33	Perform Rulemaking (if required)	10-Apr-00	31-Oct-02		
34	Recommend State airspace regulatory documentation for Phase I implementation	10-Apr-00	21-Feb-02	States under Phase I implementation	Completed
35	Recommend State airspace regulatory documentation for Phase II implementation	10-Apr-00	31-Oct-02	States under Phase II implementation	Completed
36	Perform Necessary Industry & International Co-ordination	10-Apr-00	21-Oct-02		
37	Develop transition plan for APARMO Responsibilities	14-Sep-01	31-Oct-03	FAA, AEROTHAI	
38	Establish target implementation date	10-Apr-00	1-Sep-00	RVSM Task Force	Completed
39	Develop a regional RVSM informational campaign	10-Apr-00	21-Feb-02	OPS/AIR/WG, RVSM Task Force	Completed
40	Distribute operational approval checklist and references	10-Apr-00	14-Apr-00	OPS/AIR/WG, RVSM Task Force	Completed
41	Report to ATS/AIS/SAR/SG	17-Jun-02	21-Jun-02	RVSM Task Force Chair	Completed
42	Process Doc 7030 amendment	10-Apr-00	14-Jan-02	ICAO Regional Office	Completed
43	Provide benefit-cost assessment for Doc 7030 amendment	4-May-01	14-Sep-01	SAM/WG, APARMO	Completed
44	Develop regional RVSM Guidance Material	10-Apr-00	25-Jun-00	RVSM Task Force	Completed
45	Provide comments on draft regional RVSM Guidance Material	10-Apr-00	30-May-00	ATC/WG, OPS/AIR/WG, SAM/WG	Completed
46	Publish regional RVSM Guidance Material	15-Oct-00	30-Nov-00	ICAO Regional Office	Completed
47	Publish advance AIC	28-Aug-00	18-May-01	States under Phase I implementation	Completed
48	Publish advance AIC	10-Jan-00	16-May-02	States under Phase II implementation	Completed
49	Distribute draft copy of the AIP Supplement to WG members for comment	4-May-01	1-Jul-01	ATC/WG, OPS/AIR/WG	Completed
50	Distribute final copy of the AIP Supplement to WG members for use in developing State AIP Supplements	1-Jul-01	1-Aug-01	ATC/WG, OPS/AIR/WG	Completed

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51	Publish AIP Supplement containing RVSM policy/procedures	8-Jan-01	4-Oct-01	States under Phase I implementation	Completed
52	Publish AIP Supplement containing RVSM policy/procedures	8-Jan-01	10-Jul-02	States under Phase II implementation	Completed
53	Review inter-facility coordination procedures	4-May-01	30-Nov-01	States under Phase I implementation	Completed
54	Review inter-facility coordination procedures	4-May-01	25-Sep-02	States under Phase II implementation	Completed
55	Provide guidelines on the areas that should be included in Letters of Agreement to facilitate introduction of RVSM	12-Jan-01	14-Sep-01	ICAO Regional Office	Completed
56	Finalize changes to Letters of Agreement	4-May-01	21-Jan-02	States under Phase I implementation	Completed
57	Finalize changes to Letters of Agreement	4-May-01	25-Sep-02	States under Phase II implementation	Completed
58	Finalize changes to Letters of Agreement	10-Jan-02	15-Feb-02	Cambodia	Completed
59	Publish Trigger NOTAM	11-Feb-02	11-Feb-02	States under Phase I implementation	Completed
60	Publish Trigger NOTAM	21-Oct-02	21-Oct-02	States under Phase II implementation	Completed
61	Approval of Aircraft & Operators	10-Apr-00	18-Jan-02		
62	Establish approved operations readiness targets	10-Apr-00	14-Sep-01	IATA, ATC/WG, RVSM Task Force	Completed
63	Assess readiness	1-Dec-01	18-Jan-02	IATA, OPS/AIR/WG	Completed
64	Develop Pilot & ATC Procedures	10-Apr-00	7-Jun-02		
65	Develop procedures for handling non-compliant aircraft (inc ferry & mntce) in ATS documentation	1-Sep-00	6-Sep-01	ATC/WG	Completed
66	Promulgate Procedures for Aircraft Found to be Non-Compliant through GMS Monitoring	10-Apr-00	4-May-01	OPS/AIR/WG, RVSM Task Force	Completed
67	Publish Procedures for aircraft found to be non-compliant through GMS monitoring on the RVSM website	4-May-01	15-Oct-01	APARMO	Completed
68	Review application of tactical offset procedure to mitigate the effects of wake turbulence and TCAS alerts	1-Jan-01	18-Jan-02	ATC/WG, OPS/AIR/WG, RVSM Task Force	Completed
69	Revise wake turbulence offset procedures to apply to multiple TCAS traffic alerts	10-Apr-00	1-Sep-00	OPS/AIR/WG, RVSM Task Force	Completed
70	Review weather and contingency procedures for applicability under RVSM	10-Apr-00	31-Dec-01	OPS/AIR/WG, ICAO Regional Office	Completed
71	Consider the need to develop weather contingency procedures (typhoons, etc) for addition to the Guidance Material	8-Jan-01	31-Dec-01	ICAO Regional Office, RVSM Task Force	Completed
72	Review the standard phraseology developed in the EUR Region and consider its applicability for Asia/Pacific	30-Apr-01	14-Sep-01	RVSM TF Chairperson, ATC/WG	Completed
73	Coordinate with the FANS Interoperability Teams to ensure that phraseology is contained in CPDLC message sets	14-Sep-01	31-Mar-03	OPS/AIR/WG Chair	
74	Publish RVSM phraseology in regional RVSM guidance material	18-Jan-02	30-Jun-02	ICAO Regional Office	Completed
75	Process Doc 7030 amendment to include RVSM related phraseologies	25-Sep-02	31-Mar-03	ICAO Regional Office	

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76	Process Doc 7030 amendment to weather and contingency procedures	10-Apr-00	31-Mar-03	ICAO Regional Office	
77	Review draft Random Strategic Lateral Offset Procedures developed for NAT and develop procedures as required	4-May-01	14-Sep-01	OPS/AIR/WG, ATC/WG	Completed
78	Consider establishment of regional RVSM website for dissemination of RVSM information	10-Apr-00	31-May-02	ICAO Regional Office	Completed
79	Establish a separate section on the RVSM website for the Western Pacific/South China Sea and publish appropriate documentation	4-May-01	21-Feb-02	United States	Completed
80	Include on the ICAO Asia Pacific Office website a link to the FAA RVSM website	18-Jan-02	31-May-02	ICAO Regional Office	Completed
81	Publish appropriate ATC policy & procedures on Western Pacific/South China Sea RVSM website	10-Apr-00	21-Feb-02	ATC/WG Chair	Completed
82	Identify transition areas and procedures	28-Aug-00	6-Sep-01	States under Phase I implementation	Completed
83	Identify transition areas and procedures	28-Aug-00	29-Jul-02	States under Phase II implementation	Completed
84	Conduct simulations for Phase I implementation	28-Aug-00	18-Jan-02	States under Phase I implementation	Completed
85	Conduct simulations for Phase II implementation	28-Aug-00	25-Sep-02	States under Phase II implementation	Completed
86	Report on simulation activity for Phase I implementation	28-Aug-00	18-Jan-02	States under Phase I implementation	Completed
87	Report on simulation activity for Phase II implementation	28-Aug-00	25-Sep-02	States under Phase II implementation	Completed
88	Continue to recommend that RVSM operators adopt TCAS V.7	10-Apr-00	Ongoing	OPS/AIR/WG, RVSM Task Force	
89	Establish procedures for non-approved acft to transit RVSM airspace	10-Apr-00	6-Sep-01	OPS/AIR/WG, ATC/WG, RVSM Task Force	Completed
90	Develop mutually acceptable ATC procedures for non-approved State acft to transit RVSM airspace	1-Sep-00	6-Sep-01	ATC/WG, RVSM Task Force	Completed
91	Consider procedures for suspension of RVSM	28-Aug-00	6-Sep-01	ATC/WG, RVSM Task Force	Completed
92	Liaise with State defense authorities regarding "due regard" military operations	12-Jan-01	18-Jan-02	States under Phase I implementation	Completed
93	Liaise with State defense authorities regarding "due regard" military operations	12-Jan-01	1-Oct-02	States under Phase II implementation	Completed
94	Coordinate with Aeronautical Chart providers to establish a review process for significant chart revisions prior to publication	17-Apr-00	25-Jun-01	OPS/AIR/WG Chair	Completed
95	Pilot & ATC Training	10-Apr-00	31-Oct-02		
96	Provide ATC training documentation to States based on past experience	1-Sep-00	27-Apr-01	ICAO, RVSM Task Force Chairperson	Completed
97	Update the pilot training package for TCAS to include TCAS Chg 7	10-Apr-00	12-Jan-01	OPS/AIR/WG, RVSM Task Force	Completed
98	Conduct local RVSM training for air traffic controllers for Phase I implementation	1-Aug-01	21-Feb-02	States under Phase I implementation	Completed
99	Conduct local RVSM training for air traffic controllers for Phase II implementation	1-Aug-01	31-Oct-02	States under Phase II implementation	Completed
100	Perform System Verification	10-Apr-00	31-Oct-02		

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ID	Description	Start	Finish	Resource Names	Status
101	Height keeping performance monitoring needed to undertake initial safety analysis	31-Aug-00	31-Aug-01	APARMO and SAM/WG, RVSM Task Force	Completed
102	Provide representative traffic movement data to APARMO	10-Apr-00	15-Dec-00	States	Completed
103	Provide representative traffic movement data to APARMO	15-Nov-01	14-Dec-01	States	Completed
104	Undertake initial safety analysis	10-Apr-00	14-Sep-01	SAM/WG, RVSM Task Force	Completed
105	Establish program for collection of large height deviations	10-Apr-00	12-Jan-01	OPS/AIR/WG, SAM/WG, RVSM Task Force	Completed
106	Review reports of large height deviations	8-Jan-01	Ongoing	OPS/AIR/WG, SAM/WG	
107	Final Implementation Decision	1-Dec-01	1-Oct-02	RVSM Task Force	
108	Review aircraft altitude-keeping performance and operational errors	10-Apr-00	Ongoing	SAM/WG, OPS/AIR/WG	
109	ATS State documentation complete for Phase I implementation	10-Apr-00	18-Jan-02	States under Phase I implementation	Completed
110	ATS State documentation complete for Phase II implementation	10-Apr-00	25-Sep-02	States under Phase II implementation	Completed
111	Publish Implementation Decision NOTAM/AIP Supplement	1-Dec-01	22-Oct-01	States	Completed
112	Complete readiness assessment for Phase I implementation	1-Dec-01	18-Jan-02	APARMO	Completed
113	Complete readiness assessment for Phase II implementation	18-Jan-02	25-Sep-02	APARMO	Completed
114	Complete safety analysis for Phase I implementation	1-Dec-01	18-Jan-02	APARMO	Completed
115	Complete safety analysis for Phase II implementation	18-Jan-02	1-Oct-02	APARMO	Completed
116	Declare Initial Operational Capability for Phase I implementation	21-Feb-02	21-Feb-02	States under Phase I implementation	Completed
117	Declare Initial Operational Capability for Phase II implementation	31-Oct-02	31-Oct-02	States under Phase II implementation	Completed
118	Set Southeast Asia post-implementation Follow Up Meeting	14-Jan-02	18-Jan-02	RVSM Task Force	Completed
119	Monitor System Performance	21-Feb-02	21-Feb-03		
120	Perform Follow-On Monitoring	21-Feb-02	Ongoing	OPS/AIR/WG, SAM/WG	
121	Report large height deviations to APARMO	21-Feb-02	Ongoing	ATS Providers, Users	
122	Declare Full Operational Capability	31-Oct-03	31-Oct-03	RVSM Task Force	
123	APANPIRG ATS/AIS/SAR/SG (Bangkok)	26-Jun-00	30-Jun-00	RVSM Task Force Chair	Completed
124	Task Force/8 (Location TBD) - Asia Focus	28-Aug-00	1-Sep-00	RVSM Task Force	Completed
125	APANPIRG/11 (Bangkok)	2-Oct-00	6-Oct-00		Completed

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126	Task Force/9 (Bangkok) - Asia Focus	8-Jan-01	12-Jan-01	RVSM Task Force	Completed
127	RVSM Seminar/4 (Kuala Lumpur) - Asia/Middle East Focus	25-Apr-01	27-Apr-01	RVSM Task Force	Completed
128	Task Force/11 (Kuala Lumpur) - Asia Focus	30-Apr-01	4-May-01	RVSM Task Force	Completed
129	APANPIRG ATS/AIS/SAR/SG (Bangkok)	25-Jun-01	29-Jun-01	RVSM Task Force	Completed
130	Task Force/12 (Denpasar) - Asia Focus	10-Sep-01	14-Sep-01	RVSM Task Force	Completed
131	APANPIRG/12 (Bangkok)	20-Aug-01	24-Aug-01	RVSM Task Force	Completed
132	Task Force/13 (Singapore) - Asia Focus	14-Jan-02	18-Jan-02	RVSM Task Force	Completed
133	Task Force/14 (Bangkok) - 90 Day Western Pacific/South China Sea Follow-up	30-May-02	31-May-02	RVSM Task Force	Completed
134	Task Force/15 (Bangkok) - Bay of Bengal/South of the Himalayas Focus	3-Jun-02	7-Jun-02	RVSM Task Force	Completed
135	Special ATS Coordination Meeting (Manila) - Western Pacific/South China Sea Focus	29-Jul-02	31-Jul-02	RVSM Task Force	Completed
136	Task Force/16 (Bangkok) - Western Pacific/South China Sea Focus	23-Sep-02	25-Sep-02	RVSM Task Force	Completed
137	Joint Meeting with MID East RVSM Task Force (Abu Dhabi)	19-Oct-02	20-Oct-02	RVSM Task Force (ASIA/PAC and MID)	Completed
138	RVSM Seminar/5 (Bangkok)	15-Jan-03	17-Jan-03	RVSM Task Force	Completed
139	Task Force/17 - Bay of Bengal and Beyond Focus (Bangkok)	20-Jan-03	24-Jan-03	RVSM Task Force	Completed
140	Task Force/18 (Viet Nam) - 90 day and 1 Year Western Pacific/South China Sea Follow-Up	26-Mar-03	28-Mar-03	RVSM Task Force	
141	Task Force/19 - Bay of Bengal and Beyond Focus (TBD)	26-May-03	30-May-03	RVSM Task Force	
142	Task Force/20 - Bay of Bengal and Beyond Focus (TBD)	Oct 03	Oct 03	RVSM Task Force	
143	Task Force/21 - 90 day Bay of Bengal and Beyond Follow Up (TBD)	Feb 04	Feb 04	RVSM Task Force	
144	Task Force/22 - 1 Year Bay of Bengal and Beyond Follow Up (TBD)	Nov 04	Nov 04	RVSM Task Force	