

**Work Programme for the provision by EUROCONTROL
of support in defining a Master Plan for establishing and
implementing a Central ATFM for the ACAC Member States**

TABLE OF CONTENTS:

1	Introduction	3
1.1	ACAC decisions	3
1.2	ACAC request.....	3
1.3	Content of Part I	4
1.4	Master plan.....	4
1.5	Organisational and institutional aspects	4
1.6	ACAC Member-States and structure	4
2	High level approach	5
2.1	Initial organisational and institutional considerations	5
2.2	Proposed Approach	7
2.3	Benefits of the approach.....	8
3	Work Package Description and Planning	8
3.1	Phase 1	8
3.2	Phase 2	9
3.3	Phase 3	10
4	Division of Responsibility	11
4.1	ACAC.....	11
4.2	EUROCONTROL.....	11
5	Work Programme Organisation	11
5.1	Steering Group.....	11
6	Payment and Charging Policy	11
7	Staff Support.....	12
8	Confidentiality	13
9	COST ESTIMATE (in €).....	14

**Work programme for the provision by EUROCONTROL of support in
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for the ACAC Member States**

Work Programme developed in line with Article 2 of the Agreement for cooperation between the European Organisation for the Safety of Air Navigation (EUROCONTROL) and the Arab Civil Aviation Commission (ACAC). The work to be done, the estimated costs and the duration are set out below:

- Part I provides a high level description of the proposed approach, the work package description and Planning;
- Part II presents the general conditions
- Part III shows a cost estimate in EURO per work package.

PART I - Proposed Approach

1 Introduction

1.1 ACAC decisions

The decision taken for the Arab ATFM unit has been issued in the ACAC Executive Council meeting (no. 25 - EC/26), which stated that the Executive Council approved the establishment of the Arab ATFM Unit in Riyadh (Saudi Arabia) for the coordination and development of the Air navigation Services in ACAC area. The Executive Council requested the ACAC administration to define the procedures needed to operate this unit.

The General Assembly of ACAC approved the decision of the Executive Council by its decision no 26 - GA /8, for the establishment of the ATFM unit in Riyadh.

Based on the ACAC General Assembly decision no. 26 – GA/8, Bahrain has been asked to perform a study on IFPS to be established in Bahrain to support the ATFM Unit in Riyadh.

1.2 ACAC request

ACAC requested EUROCONTROL support in its letter dated 12 June 2009. ACAC would need assistance from EUROCONTROL in the following areas:

- ♦ Development of a Master plan for establishing and implementing a Central ATFM for the Mid-States associated with all its elements e.g. IFPS, EAD, SDO, Web Access Services...etc. with estimated budget and time scale of every phase.
- ♦ All required organizational and institutional aspects
- ♦ Proposal for operational interface with the European ATFM
- ♦ Evaluation of sector capacity (Upper airspace)
- ♦ Optimization of airspace and changes to the route structure.
- ♦ Other prerequisites measures that should be taken to resolve congestion.

- ♦ Any management or operational workshops and training required to run the AFTM.

Based on the ACAC Executive Council decision, a detailed proposal on the elements of a Master Plan for the provision of a Central ATFM (hereinafter “Central Arab Flow” or “CAF”) in the ACAC area has been prepared.

1.3 Content of Part I

The proposal is structured as follows:

- Background
- A proposed high level approach to the request
- Description of the work packages

1.4 Master plan

The Master Plan is the key element of this request and the first assumption is that it should cover the following aspects:

- I. Definition of the functions of the CAF and the units, and of the level of quality required;
- II. Development of a system to support provision of the CAF functions (e.g. integrated Initial Flight Plan Processing System (IFPS), AIS system, etc.) that guarantees that data to be used by the CAF are of the required quality.

1.5 Organisational and institutional aspects

Another key component of the ACAC request is the need to establish the organisational and institutional aspects of the Central Arab Flow:

- I. Institutional aspects would ensure that the necessary political and technical support is given by ACAC to the CAF development,
- II. Organisational aspects would address working arrangements and the responsibilities of the CAF, the sub-regional or national units, the Aircraft Operators and links between them;

ACAC should invite ICAO and representative Aircraft Operators' organisations to participate actively in the work of the relevant ACAC working group.

1.6 ACAC structure and participating ACAC Member-States

a) ACAC Member-States (States that already agreed to participate in the project are marked with * - based on the latest information provided to EUROCONTROL):

- Bahrain *
- Egypt *
- Iraq
- Jordan *
- Lebanon
- Libya
- Morocco

- Oman
- Algeria
- Palestine
- Qatar
- Saudi Arabia *
- Sudan
- Syria *
- Tunisia
- United Arab Emirates
- Yemen
- Mauritania

b) ACAC structure

The structure of ACAC:

- A General Assembly composed of the civil aviation authorities of the Member States at the highest level, meeting in principle every two years; the decisions are taken with majority of the votes.
- An Executive Council composed of Director Generals of Civil Aviation (or their representatives) of five Member States, elected by the General Assembly for two years.
- Three specialised technical committees: Air Transport Committee, Air Safety Committee, and Air Navigation Committee.
- A General Directorate lead by a Director General elected by the General Assembly for two years.

2 High level approach

2.1 Initial organisational and institutional considerations

2.1.1 ACAC internal process and structure

- An internal process and structures between the participants to the ATFM/IFPS systems need to be set up by the States involved. ACAC structure will play a key role in this process. A possible structure, based on the existing ACAC structure and on the EUROCONTROL CFMU governance in the context of the EUROCONTROL / ACAC cooperation might be to create the following process to take the political decisions required and to manage the CAF:
 - General Assembly (ACAC Ministers of Transport or their representatives)
 - Executive Council (ACAC DGCAs)
 - CAF Committee (ACAC ANSPs CEOs or their Directors of Operations)
 - CAF Supervisory Board composed of two or three ACAC DGCAs, ACAC Director General, two representatives of ACAC ANSPs, one representative of airspace users, one

representative from airports and one representative from military authorities.

- A formal decision establishing this structure is required at the level of the ACAC General Assembly.
The decisions already taken by these deliberating bodies to establish an Arab ATFM unit and an IFPS unit have to be clarified as regards the number of Arab States participating to ATFM/IFPS as from its establishment or at a later stage.
The information given to EUROCONTROL indicated that only five out of the eighteen ACAC States have already agreed to the project (see point 1.6 above).
- At the appropriate time, the ACAC deliberating bodies will need to:
 - Agree to create a CAF (ATFM/IFPS) system supported by FMPs (Flow Management Positions) in each ACC of the participating States and based on the ICAO centralized system
 - Agree to transfer the overall authority for ATFM measures in the participating States area to the Arab CFMU
 - Agree to build Air Traffic Demand data base and appropriate IT support applications
 - Agree to equip FMPs with terminals linked to the CAF
 - Agree to grant aircraft operators access to the CAF system.
- The internal governance and financial issues will have to be clarified by the ACAC deliberating bodies.

2.1.2 Basis for ACAC-EUROCONTROL cooperation

The following tools could be used:

- I. An official request from the ACAC Director General and a positive reply from the EUROCONTROL Director General; this was done.
- II. The organisation of training and workshops can be done in the framework of the existing agreement for cooperation of 19 September 2003, through a Work Programme agreed by both parties. This can be done by an exchange of letters between the Directors General of EUROCONTROL and ACAC; this has yet to be done.
- III. A specific agreement between EUROCONTROL and ACAC, representing the eighteen ACAC Member States, for assistance to non Member States in ATFM (setting up of IFPS and ATFM unit(s)) is required.
 - This agreement will be a new agreement to be negotiated between the parties, subject to the approval of the EUROCONTROL Member States and the ACAC deliberating bodies.
 - Contents, financing, process, structures and governance will need to be identified in the agreement and approved respectively by the ACAC General Assembly and the EUROCONTROL Permanent Commission.

- IV. The links between the Arab Unit CAF and the EUROCONTROL/CFMU (integration, interface) will have to be addressed in this context on the basis of the relevant provisions included in the Master Plan.

2.2 Proposed Approach

From the elements above, it is clear that several high level aspects need to be clarified before any implementation work is to take place. Therefore in the planning of the different activities, EUROCONTROL is proposing a top-down approach with three main phases of action.

- **PHASE 1 – Preparation**
The first phase aims at getting a full understanding and at preparing the frame for the further work. It will mainly address the working arrangements and the planning, and ensure that participants have a good understanding of the subject
 - Address institutional ACAC governance
 - Set up common working arrangements at ACAC level
 - Develop a Master Plan
 - Ensure initial training
 - Prepare a draft agreement between ACAC and EUROCONTROL for the implementation of phase 3 and, if appropriate, for the implementation of phase 2.

- **PHASE 2 – Setting the basis and validating the process**
The second phase aims at setting and validating the organisational and operational activity taking benefit of the previous phase. It will deliver initial results in the operational planning area and in the collection of data.
 - Collecting AIS information in support of ATFM Evaluation of sector capacities
 - Addressing route network changes
 - Addressing sectorisation changes
 - Setting up collaborative process between the different actors (e.g. Air Navigation Service Providers, Airlines, etc.)
 - Setting up strategic ATFM cell.

Phase 2 needs further analysis to define if it can be done within the current signed agreement for cooperation between EUROCONTROL and ACAC or if a new agreement has to be negotiated. This will depend on the content of Phase 2 as agreed between the parties.

- **PHASE 3 – Deployment**
The third phase aims at implementing the remaining parts of the master plan. It will start when it is clearly established that each party can ensure the implementation of the project. This phase would consist of the deployment of the following families of services:
 - Centralised flight messages checking and distribution
 - Flow Management
 - ATM network information sharing

2.3 Benefits of the approach

The approach allows:

- to start the work quite rapidly and allow a common understanding through the parties in particular at high management level;
- to get a top-down approach including at operational level;
- To demonstrate quite rapidly the benefit of such a CAF to the different stakeholders;
- To prevent large investments to take place before the ground is set;
- To allow the participants to gain understanding on the work to be done and on the different objectives to be pursued;
- To allow revision if the set targets evolve.

3 Work Package Description and Planning

The EUROCONTROL support is broken down into Work Packages (WP) in three phases, as follows:

3.1 Phase 1

3.1.1 Project management

Package PROJECT1	Man-weeks	Duration	Persons	Missions (days and where)
Project management (progress meetings, project supervision, project reporting ...) in phase 1	13	12 months	1	6 m. of 1 person

3.1.2 Organisational & Institutional aspects

Package ORGANISATIONAL & INSTITUTIONAL	Man-weeks	Duration	Persons	Missions (days and where)
Establishing organisational and institutional aspects of CAF	19	12 months	2	8 m. /2 persons

A similar effort will be required from ACAC to contribute to this activity.

3.1.3 Master plan

Package FUNCTIONAL	Man-weeks	Duration	Persons	Missions (days and where)
Establishing definition of the functions of the CAF and the units, and of the level of quality required	32	4 months	2	-

Package SYSTEM	Man-weeks	Duration	Persons	Missions (days and

				where)
High level study and specification proposal to establish systems to support provision of the CAF functions that guarantee that data to be used by the CAF are of the required quality	59	4 months	4	10 m. /2 persons

Contribution from ACAC will be required to support the functional definition. It is estimated to 16m week over 4 months.

3.1.4 Training

a) Option 1 – training given at a EUROCONTROL site

Package TRAINING	Man-weeks	Duration	Persons	Missions (days and where)	Note
Management and operational training required to run the AFTM	5	3 weeks	2		5-day course; max 8 course participants

b) Option 2 – training given at an ACAC site

Package TRAINING	Man-weeks	Duration	Persons	Missions (days and where)	Note
Management and operational training required to run the AFTM	5	3 weeks	2	1 m. 7 days/2 persons	5-day course; max 8 course participants

3.1.5 Preparation of draft agreement between ACAC and EUROCONTROL

Package AGREEMENT	Man-weeks	Duration	Persons	Missions (days and where)	Note
Prepare draft agreement between ACAC and EUROCONTROL	5	1 month	2	1 m. 3 days /2 persons	Including a rep. of Legal Svc

ACAC will need to participate with the same amount of effort.

3.2 Phase 2

This phase needs further analysis to define if it can be done within the framework of the existing Agreement for cooperation between EUROCONTROL and ACAC.

3.2.1 Project management

Package PROJECT2	Man-weeks	Duration	Persons	Missions (days and where)
Project management (progress meetings, project supervision, project reporting ...) in phase 2	42	3 years	1	18 m. /1 person

3.2.2 AIS

Package AIS	Man-weeks	Duration	Persons	Missions (days and where)	Note
Collecting AIS information in support of ATFM	35	3 years	2	10 m. of 4 days/2 persons	

3.2.3 Sector capacity

Package CAPACITY	Man-years	Duration	Persons	Missions (days and where)	Note
Evaluation of sector capacity (Upper airspace)	4	2 years	2	4 x 4-day missions (2 persons; +2 days for travelling) 2 x 3-day missions (2 persons; +2 days for travelling)	Evaluation of 5 ACCs

3.2.4 Network changes and sectorisation changes

Package AIRSPACE	Man-years	Duration	Persons	Missions (days and where)	Note
Optimization of airspace and changes to the route structure → network changes and sectorisation changes validated through SAAM simulations	4	2 years to start the process; then ongoing	2	to be defined (not estimated in costs)	Prerequisite: availability of airspace data (CFMU like ENV data) and traffic demand

3.2.5 Collaborative process

Package COLLABORATIVE	Man-weeks	Duration	Persons	Missions (days and where)	Note
Setting up collaborative process between the different actors	20	9 months	2	1 m. of 3days/2 persons 2 m. of 4days/2 persons	

3.2.6 Strategic ATFM cell

Package STRATEGIC	Man-years	Duration	Persons	Missions (days and where)	Note
Setting up strategic ATFM cell	1.5	1 yr	2	1 ops + 1 eng staff to spend 6 - 9 months on site	

3.3 Phase 3

To be defined later.

PART II - General Conditions

4 Division of Responsibility

4.1 ACAC

ACAC will be responsible for the handling of the legal, financial and contractual matters linked to the project, for making the necessary operational and technical staff timely available for the execution of the project; for accepting the project deliverables, for organising the internal ACAC co-ordination and handling the necessary administrative formalities required for the EUROCONTROL staff for carrying out their tasks (e.g. site access and necessary visa and permits).

4.2 EUROCONTROL

EUROCONTROL shall be responsible for the establishment of the Project Team and working structure, for management and mitigation of risks, for monitoring and controlling project cost and for arranging for proper communications and reporting throughout the project.

5 Work Programme Organisation

In order to permit the project to be realised in an efficient and coherent manner, a Working Structure will be established as follows.

5.1 Steering Group

The Steering Group, as set up in Article 6 of the current Agreement for cooperation, shall consist of representatives nominated by the Parties. It shall act by mutual agreement. It shall be assisted by an ACAC Project Manager and a EUROCONTROL Project Manager to be appointed by their relevant authorities.

The Steering Group shall assume the following responsibilities:

- Manage and review the overall work programme;
- Ensure general supervision of the execution of the Agreement;
- Approve the Project working structure and management documents;
- Make the necessary resources available in due time;
- Set-up Groups as required and supervise their work progress.

The ACAC and EUROCONTROL Project Managers will be responsible for the administrative tasks, interfacing of team members and reporting.

Following the agreement of the Steering Group, ad-hoc meetings may be called to solve specific problems.

6 Payment and Charging Policy

- 6.1 The support services will be charged in accordance with the charging policy for the EUROCONTROL EATMP Implementation Policy.

- 6.2 For this purpose, the following conditions shall apply:
- 6.2.1 The funds shall be made available by ACAC to EUROCONTROL through a Special Annex to EUROCONTROL Budget.
- 6.2.2 EUROCONTROL shall request from ACAC further instalments every three months based on the advancement of work as the implementation of the co-operation Agreement progresses. Payment shall be made within a period of 30 (thirty) calendar days beginning from the date the invoice has been issued.
- 6.2.3 Any delay in the payment of the amounts due according to paragraph 6.2.2 above shall give rise to the payment of interest on arrears calculated on the basis of the EURO interest rate. Each day's delay beyond the periods mentioned in paragraphs 6.2.2 above shall be calculated as 1/360 of a year. The EURO interest rate shall be that applicable to 3-month term deposits published by the European Central Bank.
- 6.2.3 ACAC shall communicate to EUROCONTROL the appropriate payment services and EUROCONTROL shall communicate to ACAC the appropriate bank details.
- 6.2.4 The financial management of the present Work Programme shall be executed in accordance with the provisions of the Financial Regulations of the EUROCONTROL Agency. Upon specific written request to EUROCONTROL, a final statement of account shall be submitted to ACAC within a period of 6 (six) months after the completion of the work under the present Work Programme.
- 6.2.5 ACAC shall be authorised to scrutinise the relevant accounts on request.
- 6.3 The following charging arrangements based on the principle of non-profit making shall apply:
- 6.3.1 Costs in respect of the provision of Support under this the present Work Programme shall be calculated in accordance with the rules governing the costing of the provision of support by EUROCONTROL applicable at the date of signature of the present Work Programme by both parties. In the event of any modifications of these rules by EUROCONTROL competent authorities during the operation of the present Agreement, the modified rules shall apply and the present Work Programme shall be modified consequently.
- 6.3.2 The cost shall include all staff expenditure as approved by the competent authorities and calculated in accordance with the provisions of the Staff Regulations governing Officials of the EUROCONTROL Agency.
- 6.3.3 All costs related to the supply of equipment and / or effort and services by third parties under contract shall be charged accordingly. The cost shall be determined inclusive of value added tax, where applicable.
- 6.3.4 According to the EUROCONTROL EATM Implementation Support charging policy mentioned in paragraph 3.1 above, 20 % overhead charges will be added to the cost listed above.

7 Staff Support

- 7.1 EUROCONTROL staff assigned to ACAC for the execution of the present support shall remain subject to the Staff Regulations governing the Officials of the EUROCONTROL Agency.

- 7.2 In addition to the staff support responsibilities provided for under 4.1, ACAC shall provide office accommodation and normal administrative services (such as the use of telephone / telefax / information technology facilities for official purposes and secretarial services).

8 Confidentiality

- 8.1 Except with the prior consent of the other Party, neither Party shall disclose any technical or financial detail of the cooperation Agreement, or any specification, document and/or any other information acquired in connection with its implementation the present Work Programme to any person other than a person employed or engaged by them, or to any other persons officially entitled to handle such information.
- 8.2 Any disclosure to any person permitted under paragraph 8.1 above shall be in strict confidence and shall extend so far only as may be necessary for the purpose of the cooperation Agreement.

PART III – Cost Estimate

9 COST ESTIMATE (in €)

PHASE I		
Technical/Operational Support (Staff cost with taxes + 20% overhead)		
	all costs in	€
	Staff Costs	603 488
	Missions	105 000
	Other costs	0
	Sub Total	708 488
	20% overhead	141 698
TOTAL		€ 850 186
PHASE II		
Technical/Operational Support (Staff cost with taxes + 20% overhead)		
	all costs in	€
	Staff Costs	2 344 320
	Missions	240 000
	Other costs	0
	Sub Total	2 584 320
	20% overhead	516 864
TOTAL		€ 3 101 184
Training at a EUROCONTROL site (per course)		
Technical/Operational Support (Staff cost with taxes + 20% overhead)		
	all costs in	€
	Staff Costs	21 492
	Missions	0
	Other costs	0
	Sub Total	21 492
	20% overhead	4 298
TOTAL		€ 25 790
Training given at an ACAC site (per course)		
Technical/Operational Support (Staff cost with taxes + 20% overhead)		
	all costs in	€
	Staff Costs	21 492
	Missions	5 000
	Other costs	0
	Sub Total	26 492
	20% overhead	5 298
TOTAL		€ 31 790

EFFORT REQUIREMENTS		PHASE I				
SUPPORT		Effort (man/days) / Costs		Level of Support		
WP	Description	m/days	Total			
0	Project Management	71	61 037	Technical/Operational		
1	Establishing organisational and institutional aspects of CAF	104	89 406	Technical/Operational		
2	Establishing functional definition of the functions of the CAF and the units, and of the level of quality required	176	151 302	Technical/Operational		
3	High level study and specification proposal to establish systems to support provision of the CAF functions that guarantee that data to be used by the CAF are of the required quality	324	278 533	Technical/Operational		
4	Prepare Cooperation Agreement with EUROCONTROL	27	23 211			
			0			
	TOTAL	702	603 488			
Mission cost per WP in €						
WP	Destination	Total costs per Mission	Total No of missions	Total Costs		
0	ACAC area	2 500	6	15 000		
1	ACAC area	2 500	16	40 000		
2	ACAC area	2 500	0	0		
3	ACAC area	2 500	18	45 000		
4	ACAC area	2 500	2	5 000		
5	ACAC area	2 500	0	0		
	TOTAL Mission Costs			105 000		
Cost for Outsourcing	not applicable					
Total Costs per WP						
WP	Cost of Effort (€)	Missions cost (€)	Costs for Outsourcing (€)		Sub Total (€)	20% overhead
0	61 037	15 000			76 037	91 244
1	89 406	40 000			129 406	155 287
2	151 302	0			151 302	181 562
3	278 533	45 000			323 533	388 240
4	23 211	5 000			28 211	33 853
5						
TOTAL	603 488	105 000	0		708 488	850 186

EFFORT REQUIREMENTS		PHASE II				
SUPPORT		Effort (man/days) / Costs		Level of Support		
WP	Description	m/days	Total			
0	Project Management	231	198 584	Technical/Operational		
1	Collecting AIS information in support of ATFM	192	165 057	Technical/Operational		
2	Evaluation of sector capacity (upper airspace)	924	794 335	Technical/Operational		
3	Optimisation of airspace and changes to the route structure. Network changes and sectorisation changes validated through SAAM simulations	924	794 335	Technical/Operational		
4	Setting up collaborative process between the different actors	110	94 564	Technical/Operational		
5	Setting up strategic ATFM Cell	346	297 446	Technical/Operational		
TOTAL		2727	2 344 320			
Mission cost per WP in €						
WP	Destination	Total costs per Mission	Total No of missions	Total Costs		
0	ACAC area	2 500	18	45 000		
1	ACAC area	3 000	20	60 000		
2	ACAC area	2 500	12	30 000		
3	ACAC area	2 500	0	0		
4	ACAC area	2 500	6	15 000		
5	ACAC area	2 500	36	90 000		
TOTAL Mission Costs				240 000		
Cost for Outsourcing		not applicable				
Total Costs per WP						
WP	Cost of Effort (€)	Missions cost (€)	Costs for Outsourcing (€)		Sub Total (€)	20% overhead
0	198 584	45 000			243 584	292 301
1	165 057	60 000			225 057	270 068
2	794 335	30 000			824 335	989 202
3	794 335	0			794 335	953 202
4	94 564	15 000			109 564	131 476
5	297 446	90 000			387 446	464 935
TOTAL	2 344 320	240 000	0		2 584 320	3 101 184

[Signature page to be added at a later stage]