
FDP Institutional Issues

**Conclusions and recommendations
on the institutional issues raised
by co-operative specification and development
of FDP systems and other CNS/ATM systems**

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Key issues and approach (1)

- Improvement of ATM depends on an improved co-operation between all ATM partners based on trust and mutual understanding
 - Nearly unanimous support for modular specification
 - Nearly unanimous support for shared procurements made on a voluntary basis
 - Unanimous support for enhanced standardisation
 - Solid support for EC-led regulation
 - Significant resistance to specialised FDP service provision

- Significant diverging opinions on the way to achieve these objectives (role and power of the organisations)

- Is tradition an asset or a burden ? It helps to understand heaviness or reluctance that reflect legitimate concerns and to accept differences, compromises and a “small steps” policy.

Key issues and approach (2)

- Our approach is guided by a pragmatic attitude relying on the driving power of successful results
- In line with the spirit of the proposed new Single Sky regulations:
 - encouragement of individual initiatives to innovate across borders
 - strengthening of collective responsibility relatively to common technical standards.

Key issues and approach (3)

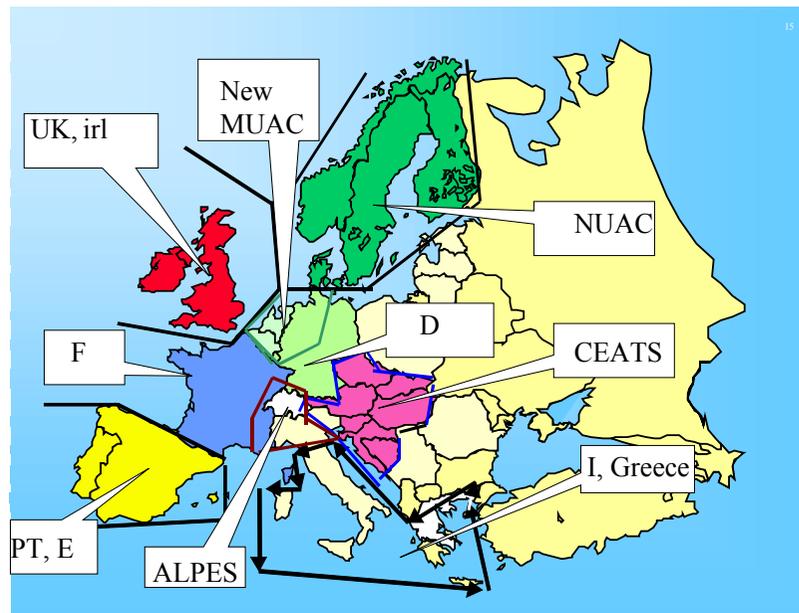
Three main points :

- **Assessment of some recent initiatives**
- **Types of collaborations that should be encouraged given the sensitivities involved, the degree of stated readiness for co-operation and legal latitude;**
- **Extension of the approach to other collaborative projects deemed relevant**

Defragmentation (1)

The concept of « Functional blocks » of Airspace:

- To enable service providers to exercise their responsibility over larger, rationally configured blocks of airspace, not constrained by traditional political geography
- Integration of service providers will lead to more integration of systems



Defragmentation (2)

- The creation of multi-national centres (CEATS, NUAC...) is in line with this idea.
- A few ATS providers (with a market-form of organisation) see there a real opportunity for future developments.
- This idea has not got a wide acceptance from the stakeholders. Most of the key players in the core area are not ready to accept a change from incumbent ATS providers, nor to modify the definition of their centres.
- cf ARTAS, which failed to achieve a fully seamless system : Many States want to keep full control over their systems for safety and to protect sovereignty rights (in case of crisis).
- Would the reduction of ATSUs reduce the total costs (Staff : 80% of the costs)

Defragmentation (3)



To be successful, the de-fragmentation of airspace should rely not so much on a general top-down approach to reduce the number of fragments, but on a focussed and stepwise effort to integrate the workings of the fragments by a better standardisation of systems aimed at making them fully interoperable.



Harmonisation & optimisation of operational procedures would lead to:

- reduced personnel cost due to the fact that this would allow for better scheduling of resources (one controller being able to be licensed for more sectors)

- uniformed interface controller-pilot.

Interoperability (1)

- Improved interoperability implies increased data sharing and more responsive data updating
- This has no meaning if there is no consensus on the operational requirements, logical architecture, data model and mutual roles of systems. Therefore, the actions driven at upper level by Eurocontrol on the EATMP HL Requirements and Overall Architecture are essential.
- The role of the systems being defined, as well as the data to be exchanged, an implementation plan must be defined. Measures must be taken to monitor and enforce the decisions taken. Incentives are also important.

Interoperability (2)



The EUROCAE groups dealing with ATM ground systems interoperability, namely WG 59 “Flight Data Processing” and WG 61 “ATM Open Architecture”, have to be encouraged by appropriate funding, especially to guarantee an active involvement of industry and ATSP’s.

Our recommended policy line is to facilitate co-operation, consensus and timeliness of action:

- ❑ **with standards defined at the “right” level, i.e. sufficient freedom should be retained for ATS providers in the detailed specification, and for industry in the details of technical solutions.**
- ❑ **by giving priority to efficiency over “aesthetic” considerations (stick to clients needs, and “keep it simple”).**

Interoperability (3)



An overall co-ordination/liaison of the various working groups involved in the ATM architecture definition, ATM architectures standardisation, and ATM systems interoperability (Eurocontrol, Eurocae, CFDSG) is needed to ensure technical consistency and avoid overlap or duplication of work.



Introduce as a performance indicator the answer to the users' needs relatively to the "Single Sky" seamlessness.

While it will not be simple to reward efficiency practices qua efficiency practices (e.g. as opposed to rewarding final service performance), ATM charging/costing principles should be reviewed so that efficient investments that create interoperability result in net benefits for providers as well as users.

Concept of Consistent FD Environment (1)

- The foregoing mandates and scope of work suggest that the CFDSG could, if properly co-ordinated and supported, develop comprehensive and overall insight with respect to cost-effective FDP modernisation strategy at the European level.
- The need for and feasibility of some new interoperability requirements (i.e. covering ECAC area) are still to be proven.
- Decision-making is fragile in the CFD steering committee (as one participant can block the progress of the group).

Concept of Consistent FD Environment (2)



Endorse CFD initiatives.

Clarify the commitment of stakeholders to the CFD programme.

Carefully balance the costs and benefits of solutions proposed.

Validate the solutions with a very close co-operation with the users (controllers, CFMU operators, Airlines agents, etc...) to avoid building “gasworks”.

Regulation framework (1)

- As the optimum solution for Europe is not the sum of individual optimum solutions, it is necessary to have integrated solutions and a regulatory framework helping decision making and enforcing implementation of prioritised solutions, after a large consultation of the stakeholders.
- Decision-making is reinforced by the 1997 Revised Convention of Eurocontrol and Commission regulations (i.e. transposing Eurocontrol measures into Community legislation)
- Regulatory unit of Eurocontrol
- Significant regulatory work has been done by Eurocontrol
- EC: a good platform for social dialogue, with manufacturing industry ; assure coherence with other transport areas policy, environment, security

Regulation framework (2)

- The respective roles of Eurocontrol, the Commission and the states regarding regulation remain to be detailed. Each organisation possesses distinct natural advantages and a different scope of action. There is always the risk of duplication and even conflict.



Regulation framework (3)



To co-ordinate and optimise efforts:

by giving the Eurocontrol Agency a structural role in the development of implementation rules and standards

which the Commission will be positioned to adopt and enforce.

The integration of regulation plans and the harmonisation of priorities would be most efficient.

Performance monitoring (1)

The ECAC institutional strategy is performance-oriented.

The comparison of performance indicators between ATSP, ATS units, suppliers is a source of progress: highlight and promote best practices, and also favour harmonisation and convergence. It requires a background of confidence between the stakeholders.

The PRC has pioneered in introducing more systematic economic analysis to the ATM field, chiefly regarding operating efficiency (i.e. service provision).

States are going on tip-toes in that direction. Productivity elements are very sensitive. Data remain highly confidential.

Such analysis is necessary also to compare investment efficiency and modernisation strategies.

Performance monitoring (2)



The Commission should consider measures to require that EU Member and Associated States provide information that enables benchmarking and comparison of (FDP) development costs and procurement efficiency.

It may also be necessary to issue reporting requirements to determine the current operating costs of performing the FDP function.

Collaboration in system development and procurement (1)



A complete picture of the current and foreseen developments in the FDP field, widely accessible, is still missing. It is necessary to achieve a global view of the objectives, planning and outputs of R&D and systems implementation programmes in Europe agreed on an individual state basis as well as collective basis. The EC could act for a better transparency between stakeholders in this respect.

Towards a partnership between Industry and ATSPs ?

A new partnership between ATSP and Industry can be investigated to combine their various competencies.

This is furthered by the separation between regulation and service provision, new form of organisation of the ATSPs.

This implies a change of culture and governmental willingness to facilitate appropriate market conditions.

EAD project shows it is possible.

Towards joint procurements ?

The failure of eFDP relatively to ECAC-wide procurement shows that the reduction of the number of FDP systems should be left to occur through voluntary co-operation and market force (such as the reduction of development costs) rather than through regulatory enforcement.

All that needs to be done is to make sure that the technical solutions retained for the future interconnection architecture do not preclude that reduction (and that implies stringent common interoperability and performance standards).

Collaboration in system development and procurement (4)

Towards joint procurements ?



- The EC should (e.g. through TEN-T funding) encourage joint programmes aiming at a better connectivity between systems. These developments could feed the work of standardisation groups, thus avoiding risks of divergence with standards being developed. This development work could also make up the bricks of a platform to validate the standards.



- The EC should give incentives to help phasing the upgrade of operational systems interfaces with newly published standards.
- The experience of ARTAS led Eurocontrol to modify its policy concerning the development of prototypes by Industry. It seems reasonable to retain double development (two companies in parallel on the same project) when affordable in order to sustain the industry knowledge and competency.

Collaboration in R&D



The G2G programme, which is key to the validation of promising ATM concepts, must be given the highest attention and priority. The programme will contribute also to the development/strengthening of partnership between ANSP's, industry, Eurocontrol and the European Commission.



The participation of Industry is essential to the definition of feasible standards, and their active involvement in EUROCAE WG 59 and WG 61 could be supported financially by the EC.



“The right solution” is not in the hands of one single party. Industry can really have a more proactive attitude in the partnership with the EC and take part in the definition of the strategy.

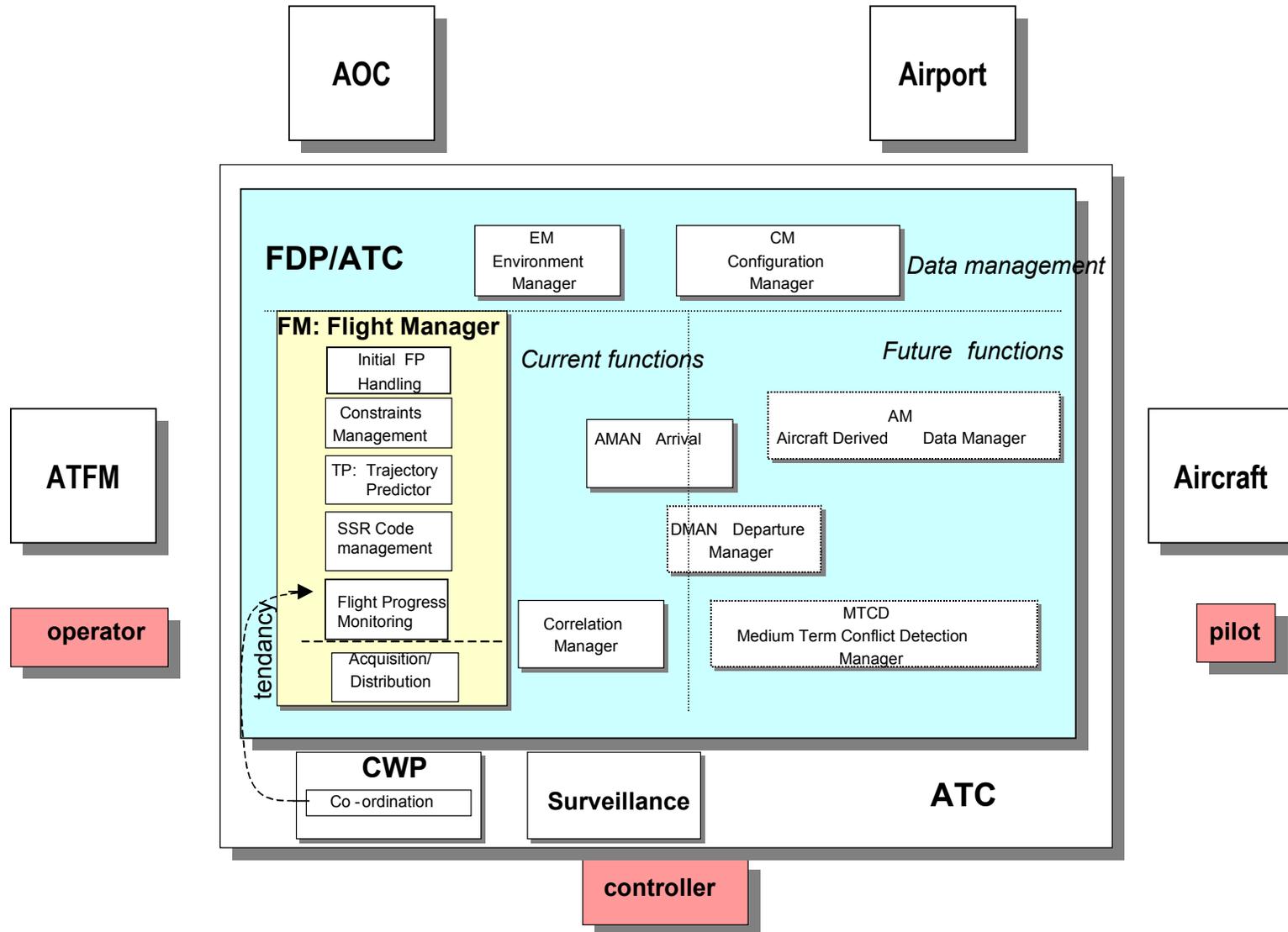
Extensibility of the approach (1)

Most of the statements and recommendations made in the report are not restricted to the sole FDP (Decision-making strengthening, performance-driven management, stimulation of partnership and joint procurements between stakeholders).

Our stakeholders' survey has confirmed that the validation of concepts, the definition of operational requirements, the definition and validation of common infrastructure can only be achieved through a large partnership.

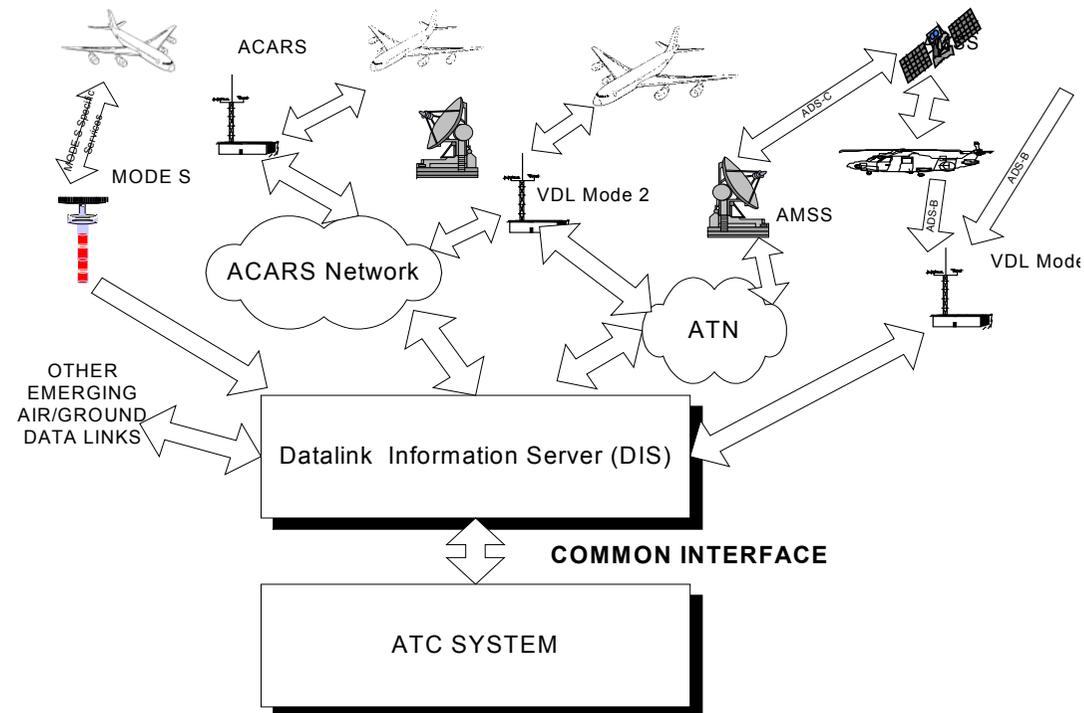
On the other hand, the development of industry products as well as the detailed specification of systems taking account of the local specificity are today treated on a case by case basis safeguarding Industry interests (including IPRs).

Extensibility of the approach (2)



Extensibility of the approach (3)

The more promising area for collaborative projects is around D/L applications.



Extensibility of the approach (4)

New tools (MSP, conflict resolution, approach metering and sequencing, en route manager...) will benefit from D/L exchanges.

It is essential to (continue to) promote R&D in this field.

GTG will be used to validate those tools.

The standardisation of corresponding interfaces can only be achieved in the medium term.

Conclusions (1)

Improving the ATM performance can only be achieved through stronger partnership between all stakeholders. Our recommendations to foster this necessary collaboration are:

- to encourage **pragmatism** by promoting standardisation and interoperability between systems rather than enforcing integrated trans-national concepts
- to look for **an overall co-ordination**/liaison of the various WG involved in the ATM architecture definition, standardisation, and in the ATM systems interoperability (Eurocontrol, CFDSG, EUROCAE...) in order to ensure technical consistency and avoid overlap or duplication of work
- to **promote interoperability standards** leading to reduced development costs and accelerated development life-cycles through EUROCAE WG59 and WG61, with appropriate funding when necessary
- to **endorse CFD initiatives**, being concerned with cost efficiency and the practical need of the users

Conclusions (2)

- to **co-ordinate and optimise the regulatory environment** area by giving the Eurocontrol Agency a structural role in the development of implementation rules and standards
- to **promote the culture of performance** through the definition of objectives, implementation plans, benchmarking and transparency, not only for operations proficiency but also for cost-effective development, procurement and implementation of interoperable systems.
- to **promote collaborative projects** involving two or more ATS providers (and Industry suppliers) that stimulate rapid transition to **interoperability** and connection to other systems, for example by appropriate funding support. Consistency with other projects should be assured by the participation of these stakeholders in the standardisation groups.

Conclusions (3)

- to **continue and promote the partnership with industry suppliers**, e.g. the 6th Framework Programme, the development of mock ups, the validation of pre-operational systems, and to invite suppliers to become more pro-active in global strategy definition.
- in the co-ordination of R&D activities to stress integration of Industry projects into the global context and to **push for the definition of a central body for management and control**, e.g. under the umbrella of the ACARE initiative.
- to **push and support those R&D programmes** where the validation of common architectures, Data/link and tools for the controllers are pursued in a collaborative way.

Bottom up initiatives can fit with top down decisions.

This involves **real cultural changes** in management practices.