SESAR:
European Framework for ATM R&D

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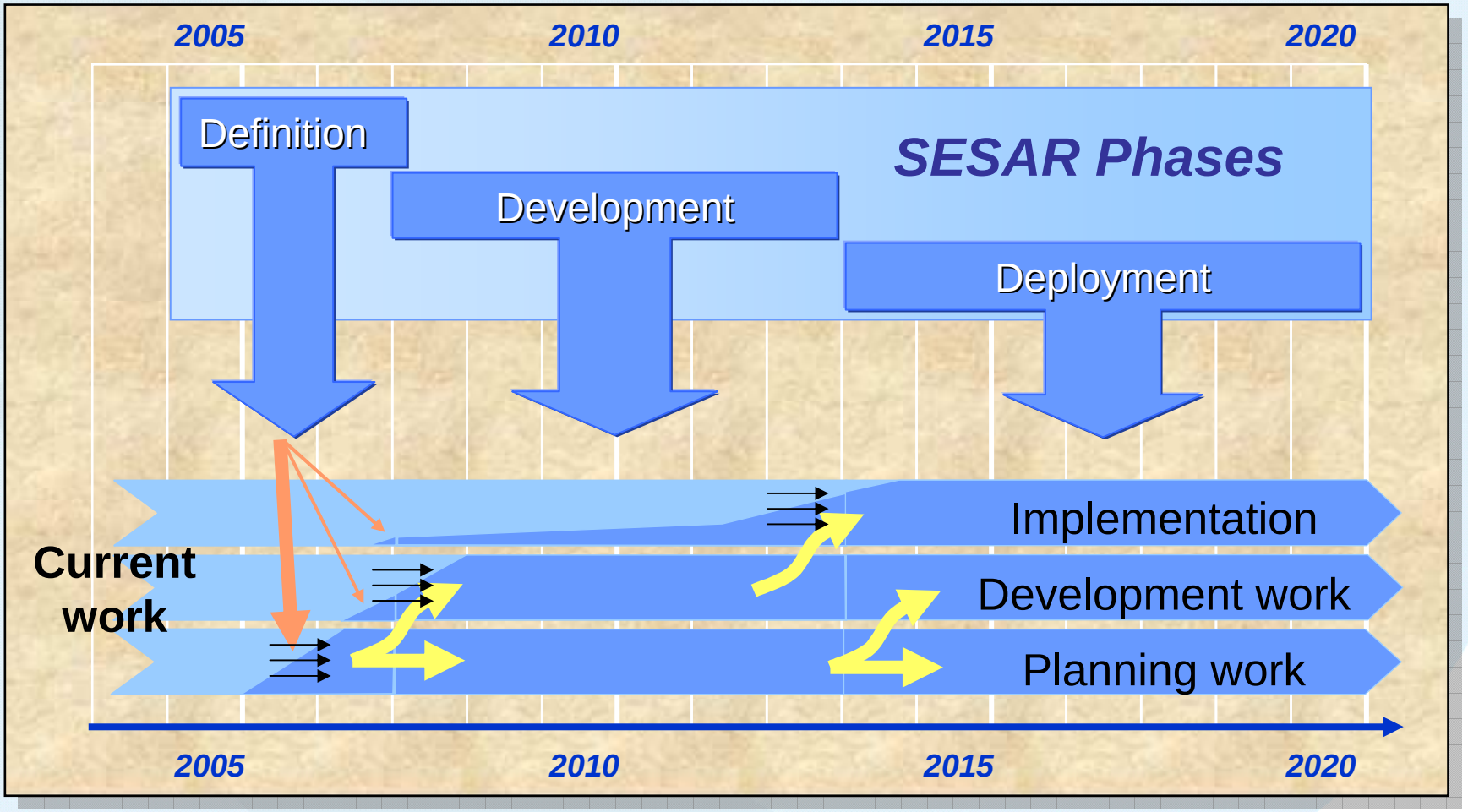
SESAR Cohesive Programme for Stepwise Implementation



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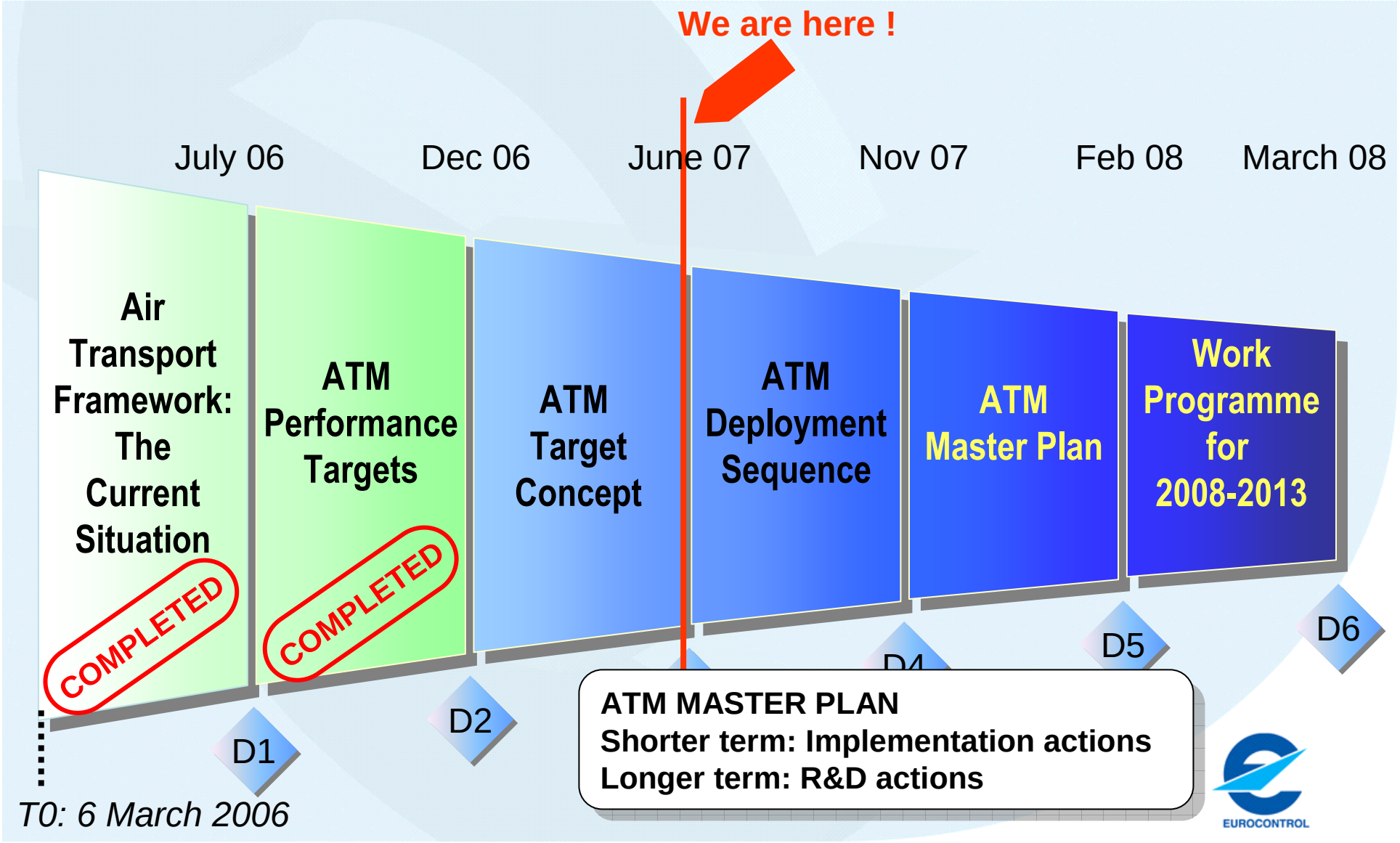
SESAR Definition Phase
Main Milestones and Deliverables



D1: Air Transport – The Current Situation

Research community criticised as there seems to be a missing link between successes and implementation

- **R&D perceived as being conducted in a fragmented manner**
- **Not addressing identified needs**
- **Lacking robust user requirements**
- **Insufficient Business planning analysis and/or Safety case work**

Another shortcoming: knowledge management

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D2: Performance Targets

Derived from needs of society and airspace users

Progressive deployment, when/where needed

Design Goals for scalable future capability:

- **Safety: factor 10**
- **Capacity: handle 3 times traffic**
- **Environment: - 10% effects per flight**

2020 targets:

- ✓ **Capacity: + 73% overall**
- ✓ **Safety: improvement factor 3**
- ✓ **Costs to airspace users: - 50%**

Also considered:
Security, Efficiency, Flexibility, Predictability, Global Interoperability, Access, Equity, Participation

(Reference: 2005)

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D3: the Target Concept

New system's features

- Airspace configured according to operations
- 4-D Trajectory management
- Automated control functions
- Advanced airport tools
- Air-Ground data link
- System Wide Information Management (SWIM)
- Autonomous airborne separation
- Satellite navigation

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SESAR is about Paradigm Shift

Past

Procedural

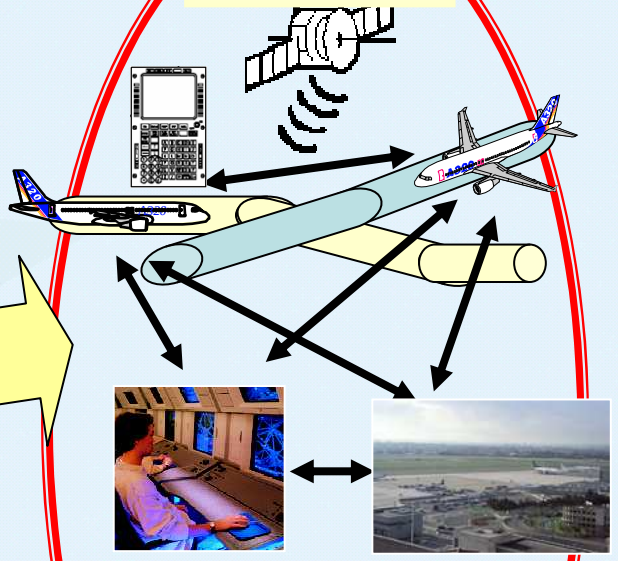
***Estimate* the current and planned a/c positions**

Today

Radar

***Know* the current and *estimate* planned a/c positions**

Future



Trajectory

***Know & share* the current and planned a/c positions**

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SESAR Development Phase

SESAR Joint Undertaking,
a Public-Private Partnership

- **Founding Members: EC & EUROCONTROL**
- **Other members: industry, third States**

- **Budget: € 2,100 million over 8 years**
  - **Around 1/3 EC, 1/3 EUROCONTROL, 1/3 industry/3rd parties**

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SESAR JU Goals

- ***Goal: manage the activities of the development phase of the project to modernise air traffic management in Europe and to enhance safety (the SESAR project) …***

- … by coordinating and concentrating all relevant research and development efforts in the Community. It shall be responsible for the execution of the ATM Master Plan … in particular …

- organising the technical work of research and development, validation and study, to be carried out under its authority while avoiding fragmentation of such activities,

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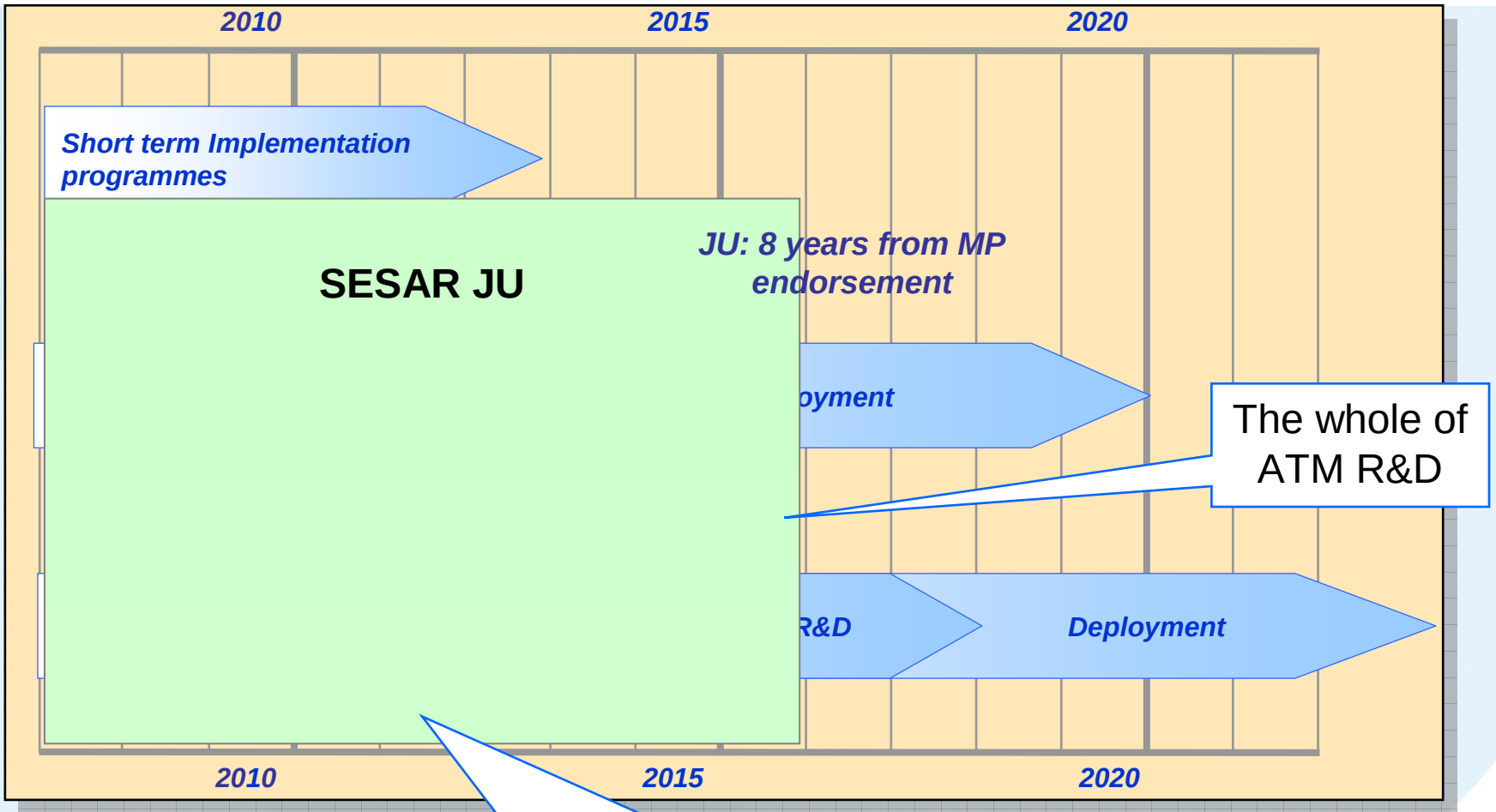
Scope of R&D in SESAR



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JU Establishment

- 27 Feb: JU Regulation formally approved by EU Council
- 8 June: Positive conclusion of EC Council marking the start of JU operations
- 15 June: 1st meeting of the Admin Board
  - Practical set up being progressed
  - Executive Director
  - Scientific Community chair still vacant
- Soon: open call for interest in membership

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Cost Perspective: Spend Better Together, not much More

Definition Phase	Development Phase	Deployment Phase
60 M€ (2 years)	2.1 B€ (8 years)	~20 B€ till 2020

- Current ATM R&D spending: ~200M€/year (mainly research)
- Current level of investment: close to 1B€/ year

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Global ATM Perspectives

- General requirement for **efficient services** and **interoperable avionics & procedures**
- With general traffic growth, new areas become “high density”
  - Can reuse experience of present high density areas,
  - Can better anticipate without going through all the same steps
  - Can support wide range of aircraft capabilities with more flexible ATM resources
- SESAR/NextGen, leading edge of wider harmonisation needs
  - 2 regions with similar issues can work together and convince others of the benefits
  - **Act early in life cycle is more efficient**
- **Manage ATM knowledge to capitalise on accumulated experience**

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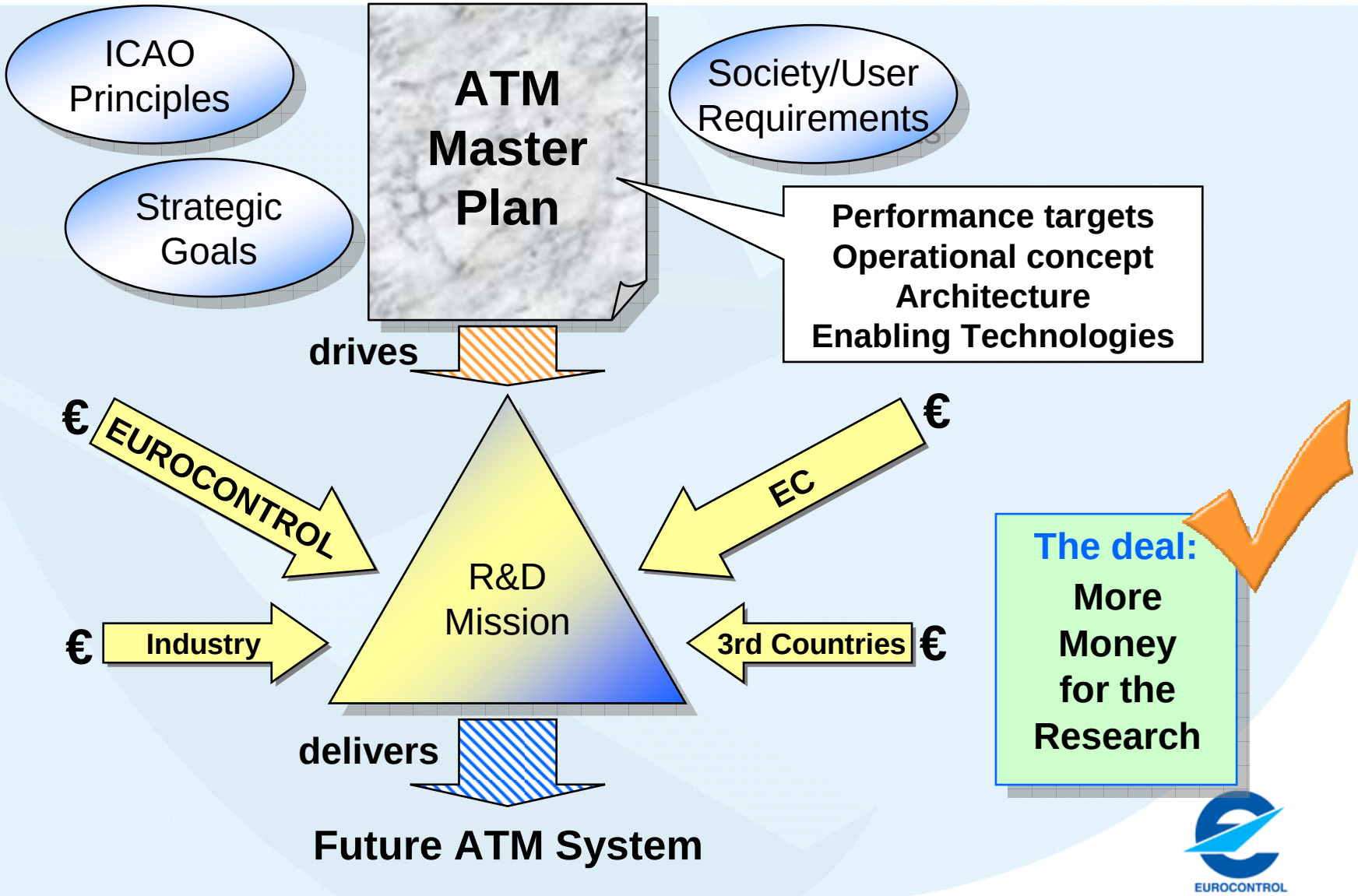
SESAR: Clear Framework for European R&D Community



Conclusion

- **SESAR brings a new dimension to European ATM**
- **SESAR is on track**
- **SESAR's success depends on everybody's commitment to the Master Plan prepared by and for all actors, in particular the efficiency of the Development Phase**

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