



# CONTRACT-BASED AIR TRANSPORTATION SYSTEM (CATS)

## Contract of Objectives Concept

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# Objectives of the Concept

## Find a simple object to manage all the aspects of the ATM system

- Organisational aspect
- Performance aspect
- Business aspect
- Legal aspect
- Planning phase
- Execution phase

**Specify how this object is operationalised to support ATM**



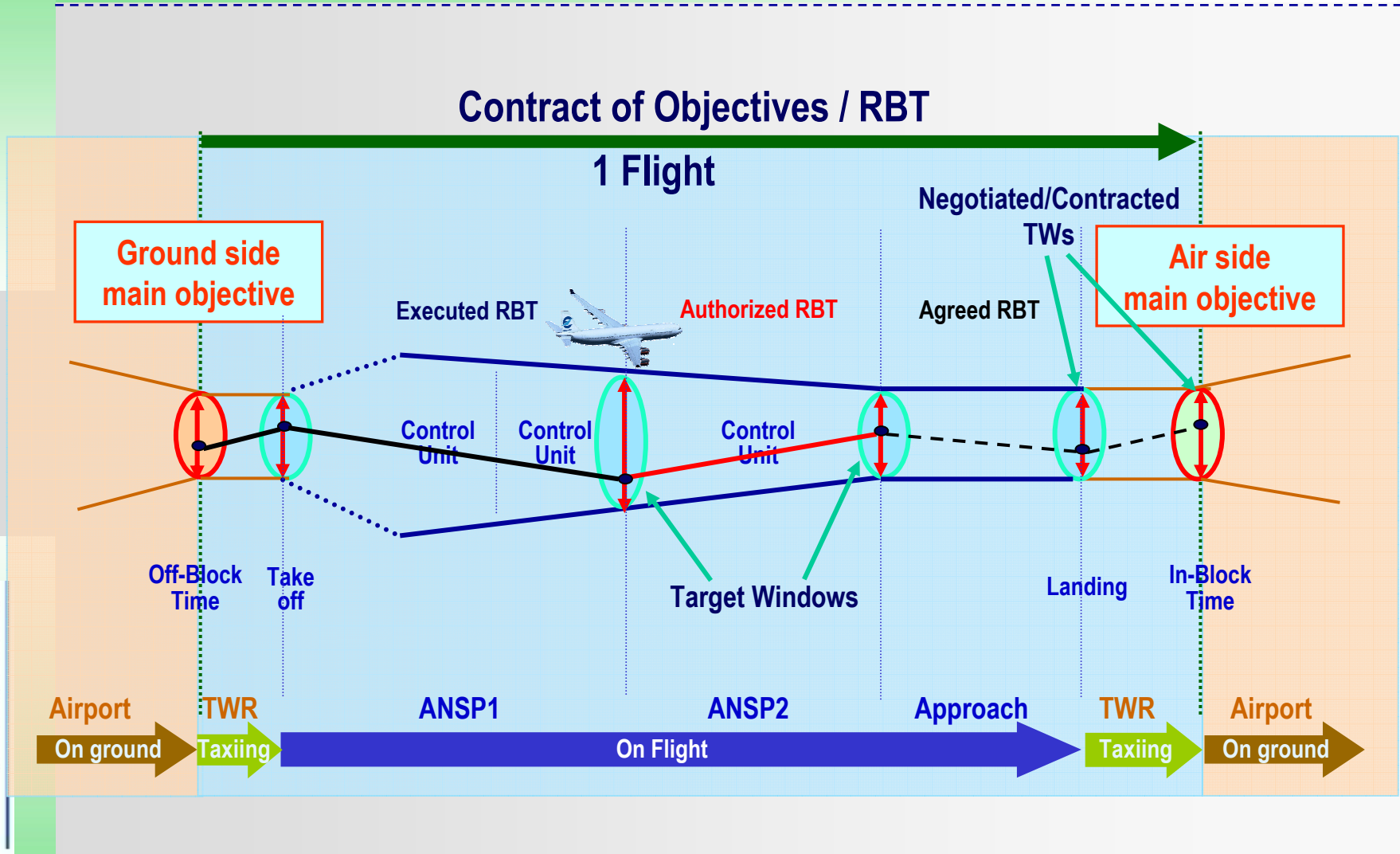
# CATS concept: ATM through TW



## Object : the Target Windows (TW)

- A flight is composed of a set of Target Windows
- These TWs are :
  - defined through the Airline trajectory, at **transfers of responsibility area** (spatial and temporal intervals: variable sizes)
  - refined during the planning phase
    - through a **collaborative process** (CDM)
    - based on **punctuality at destination**
    - best use of **scarce resources**
    - integrate **room of manoeuvre** (disruption, uncertainty)
  - **fixed before departure** (signature of the Contract of Objectives)  
-> (commitment / accountability)
  - **become Objectives** for all the actors/operators

# CATS: TW Organisational aspect

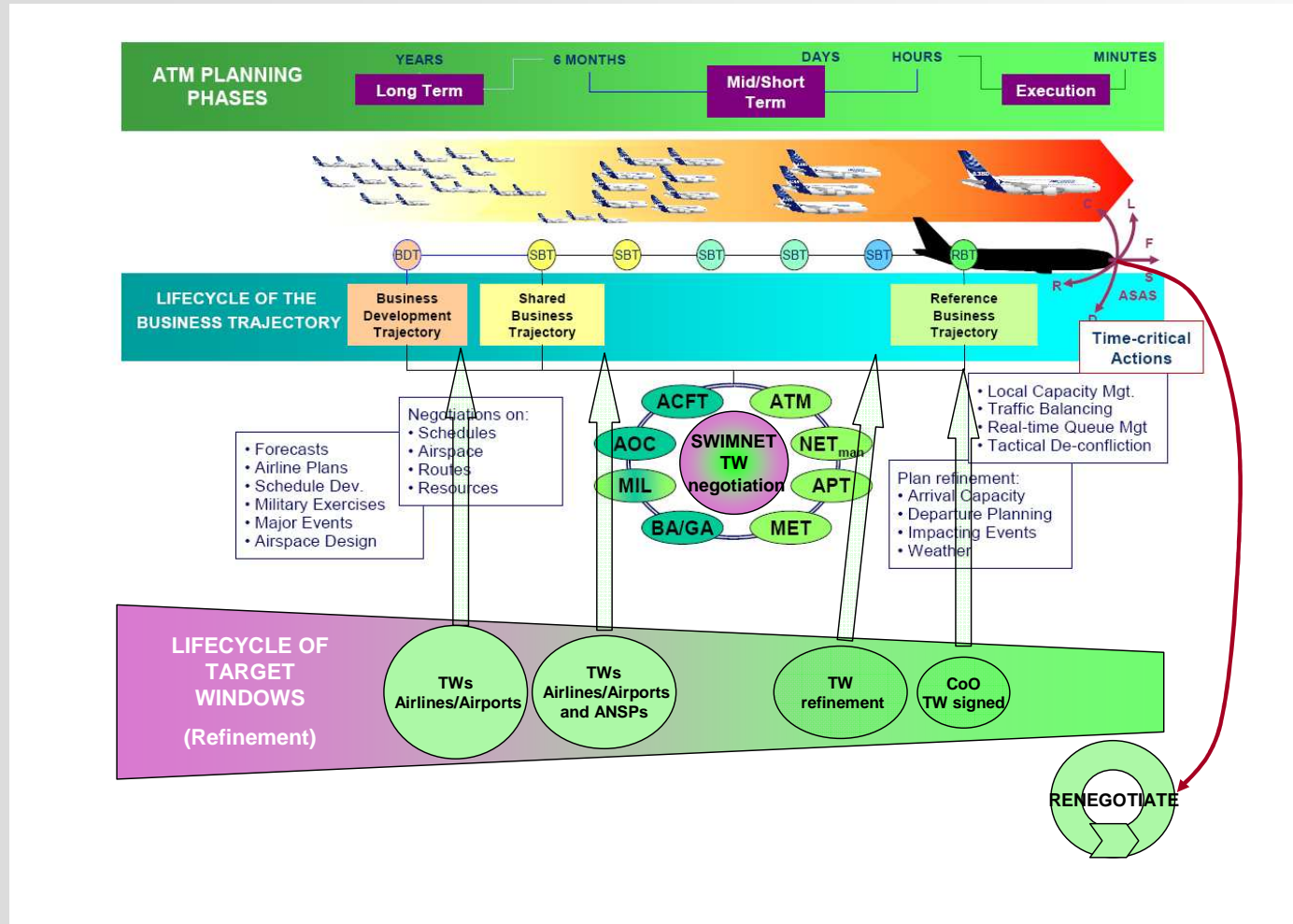


# CATS: TW lifecycle



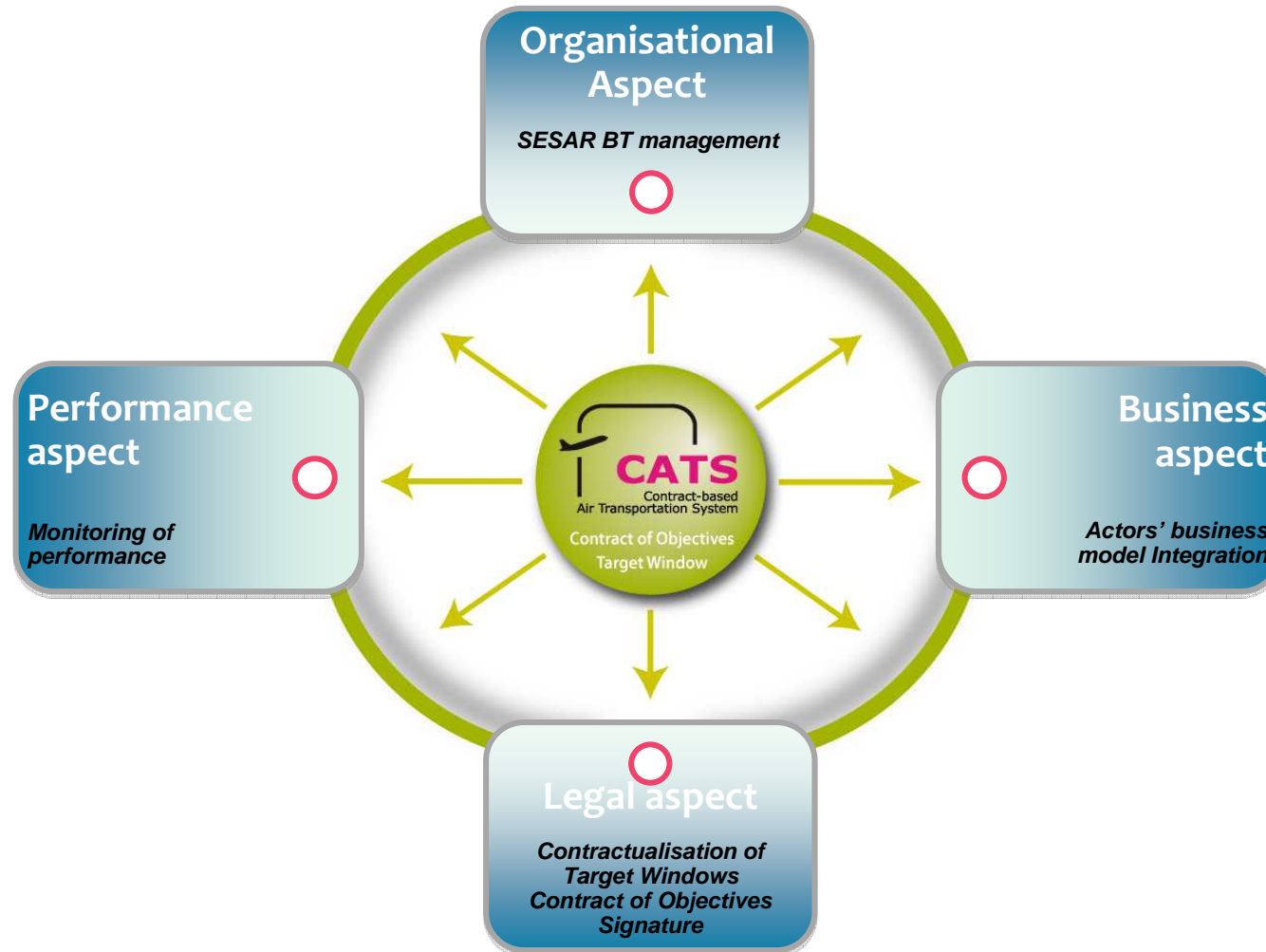
- Drafting process comprises three phases:
  - Phase 1: Airport resource management
    - ▶ Airports (departure and destination) and airlines
    - ▶ Examining runway capacities, in order to bring the resources into line with airline demand on the date when the requested flights are to be performed
  - Phase 2: Resource management and anticipation of disruption
    - ▶ Airports, airlines and ANSPs (CDM process)
    - ▶ Incorporation of known or probable medium-term disruptions
  - Phase 3: Disruption management
    - ▶ The TW incorporates the most recent data and any current disruptive factors which will affect future traffic.
    - ▶ The "Contract of Objectives " is issued shortly before off-block time at the airport.
    - ▶ the Target Windows become fixed.

# CATS: TW lifecycle



# CATS concept: a global framework

## CATS concept : Global framework through TW management



# CATS: TW Organisational aspect



- CoO/TW create a link :
  - between actors through formal commitment
  - to synchronise the planning and the execution phase within a consistent and explicit framework

Plan what is feasible and fly what is planned

- TWs permit to optimize resources at the strategic level
  - facilitation of the BT, by contractualising the transfer of responsibility area
  - through negotiations
- For controller and aircrew with integration of room of manoeuvre in TW, the CoO gives :
  - the means of managing the imprecision inherent in air traffic
  - the mean to integrate local objectives with global efficiency of the system

# CATS: TW Business aspect



- Contract of Objectives (CoO) will be concluded among all involved actors through CDM
  - Integration of ATM corner point (capacity, environment, ...)
  - Integration of actors' specificity (business model ...)
  - Cooperation on management of resources
  
- New way for performing ATM by

Mutually agreed objectives

# CATS: TW Legal aspect



- CATS project integrates the legal aspect by ensuring consistency with current rules and regulation
- Safety will never be contractualised
- Accountability is linked with agreed assignment of responsibility (responsibility vs. organisational means)
- CATS concept could be a framework to smoothly shift the ATM paradigm :
  - E.g. put in place a route charging scheme link to performance

# CATS: TW Performance aspect



- Enhanced collaboration will improve ATM efficiency and predictability (be on time with best used of resources)
- TW is a mean of monitoring performance (SES2 initiative)
  - Analyse the performance level through fulfilment of TWs
- TW allows post-analysis to continuously improve the system
  - Identify failure, bottleneck (learn from the past and propose solutions)

# CATS concept: a global framework

## CATS concept : Global framework through TW management



