

The banner features a dark blue background with a grid of white lines. On the left, a vertical scale ranges from 180 to 240 in increments of 5. Several white airplane icons are scattered across the grid, connected by thin white lines. On the right, a glowing blue network of arcs and lines is superimposed over a dark globe.

SWIM Master Class

June – October 2012

B2B Web Service Infrastructure/Architecture

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NM releases / systems available



Service architecture



Publish / subscribe

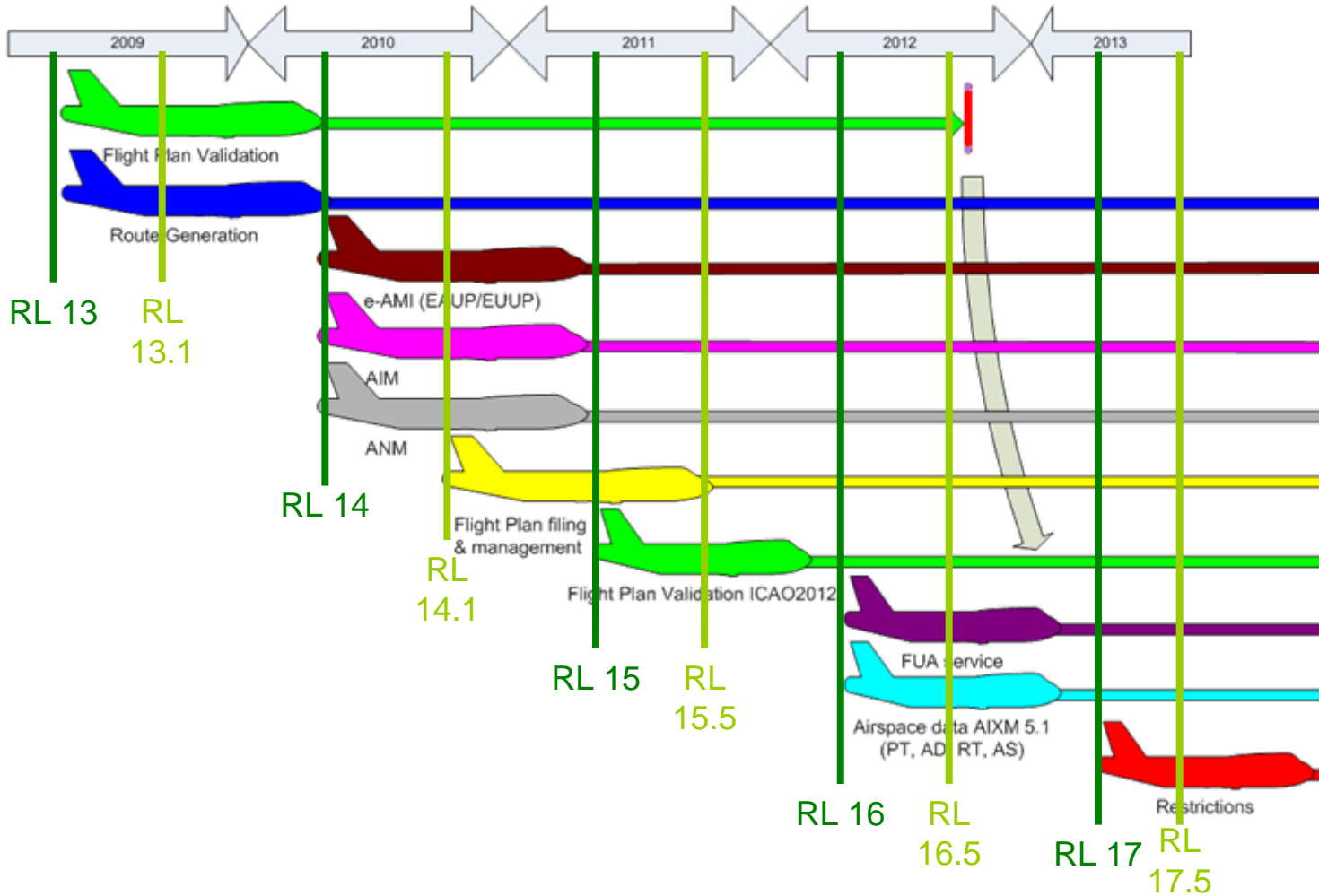


Architecture constraints

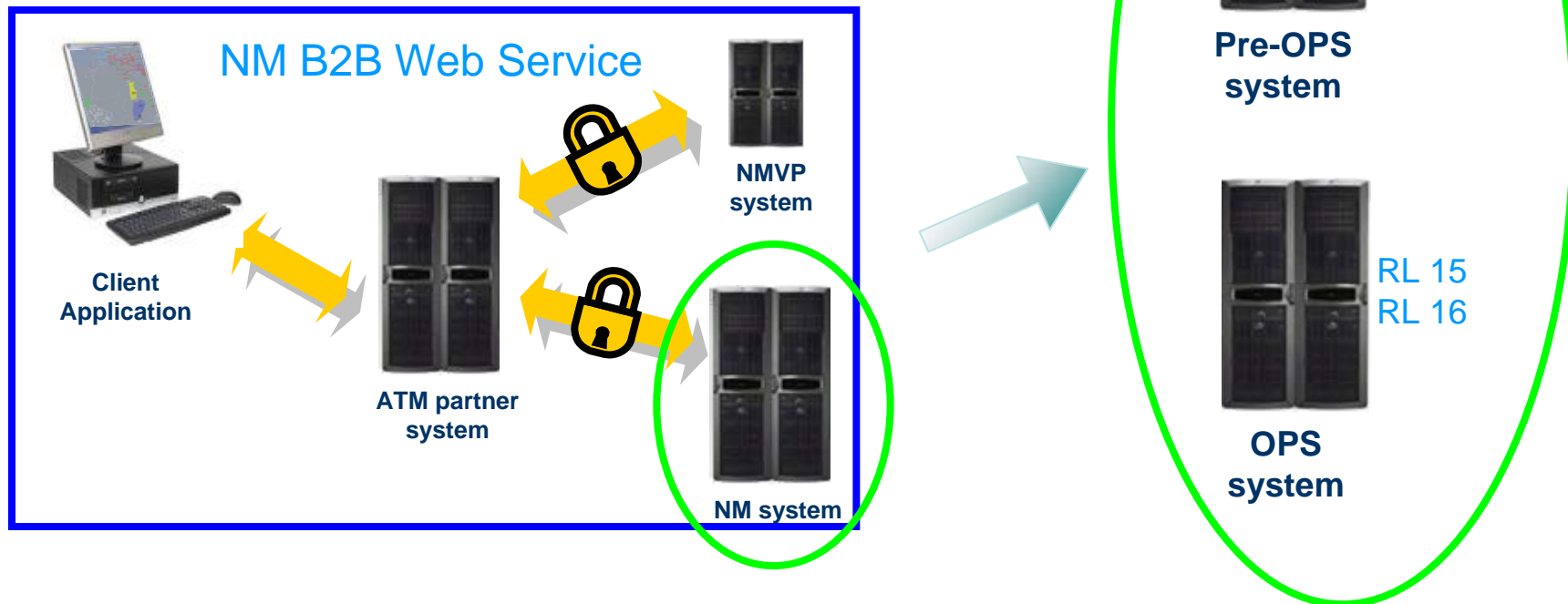


Conclusion / Q&A

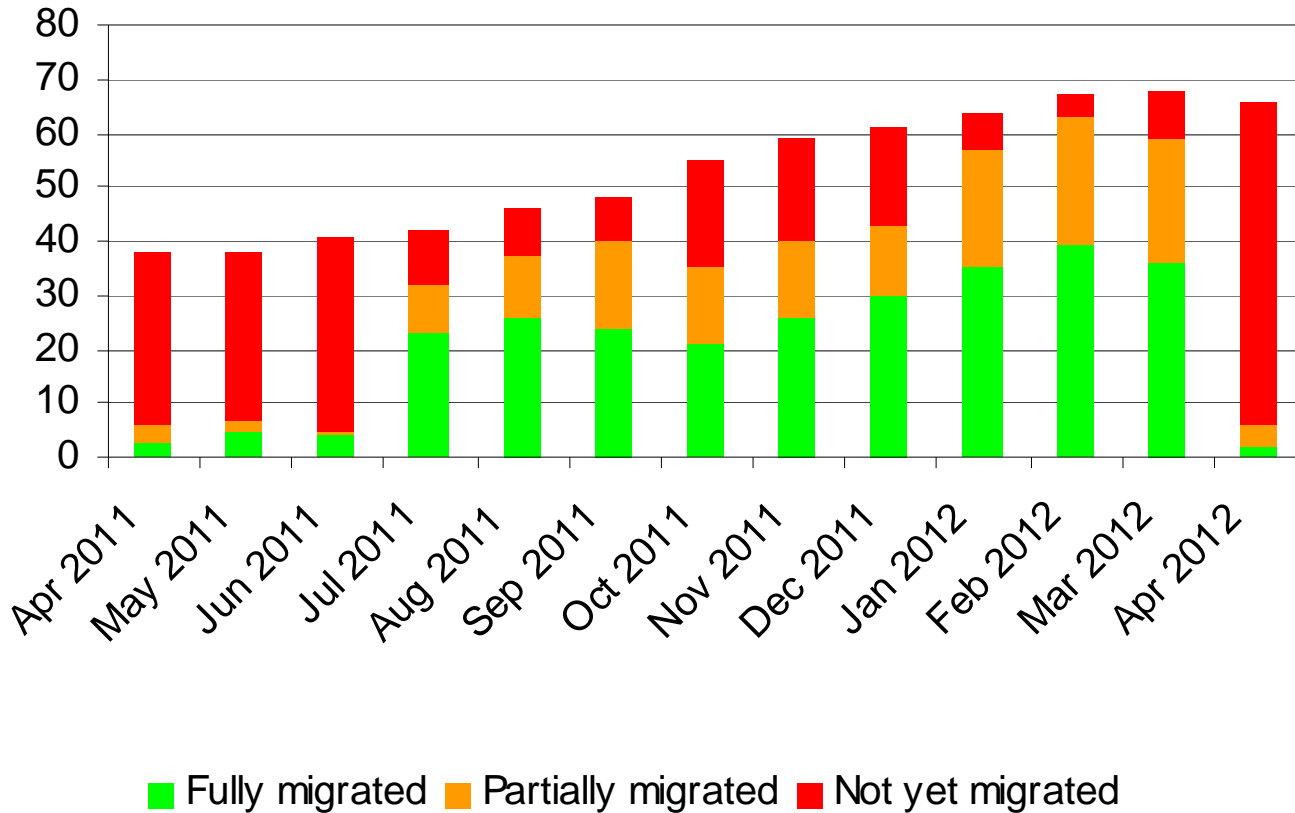
- Release Cycle



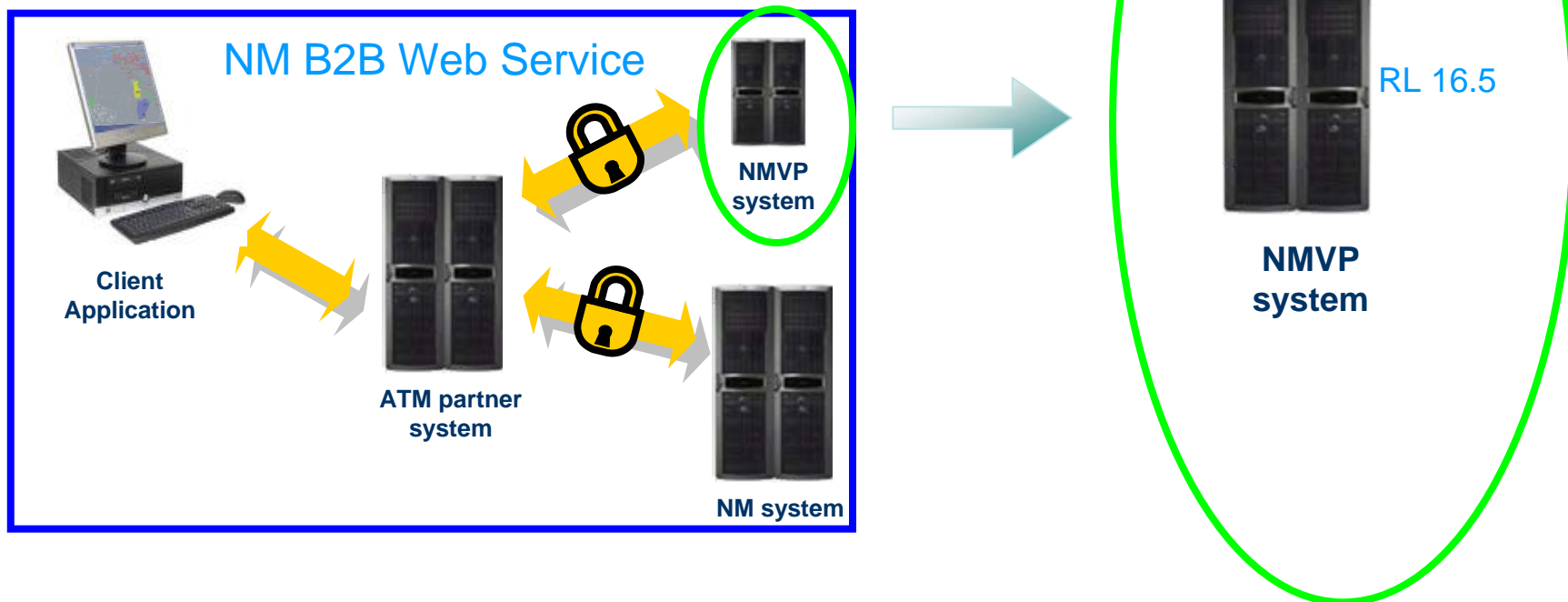
- 2 platforms
 - Pre-Operational platform (Pre-OPS) for test
 - Operational platform (OPS)
- 2 services versions
 - Deprecated release: RL 15
 - Current release: RL 16



B2B Web Services Customers Deprecated versus Current release usage



- 1 additional platform
 - Non-Operational platform for Validation exercise
- 1 service version (anticipated compare to OPS and pre-OPS)
 - Current release: NM 16.5 still under development
 - Exercise ongoing on same platform (SESAR Validation exercise preparation).



- Web services paradigm: based on query/reply communication
 - Service's Consumer explicitly requests the service to the provider
 - Asymmetric communication: always initiated by the consumer
 - The provider never sends spontaneously any information
- Pure client-server example, where:
 - The consumer is the client
 - the one that **initiates** the communication
 - the active part
 - The provider is the server,
 - the one that **waits for requests** and serves them
 - the passive part



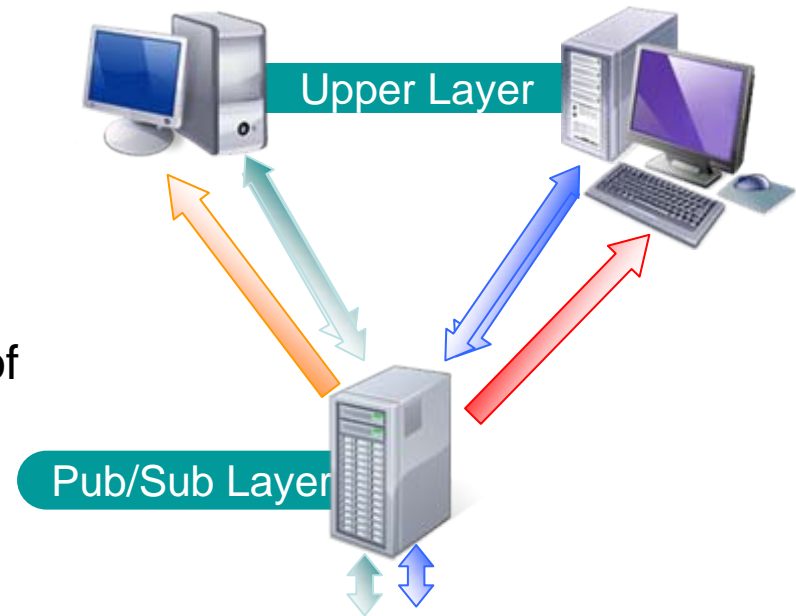
This type of communication is adequate to ask the provider to execute a service

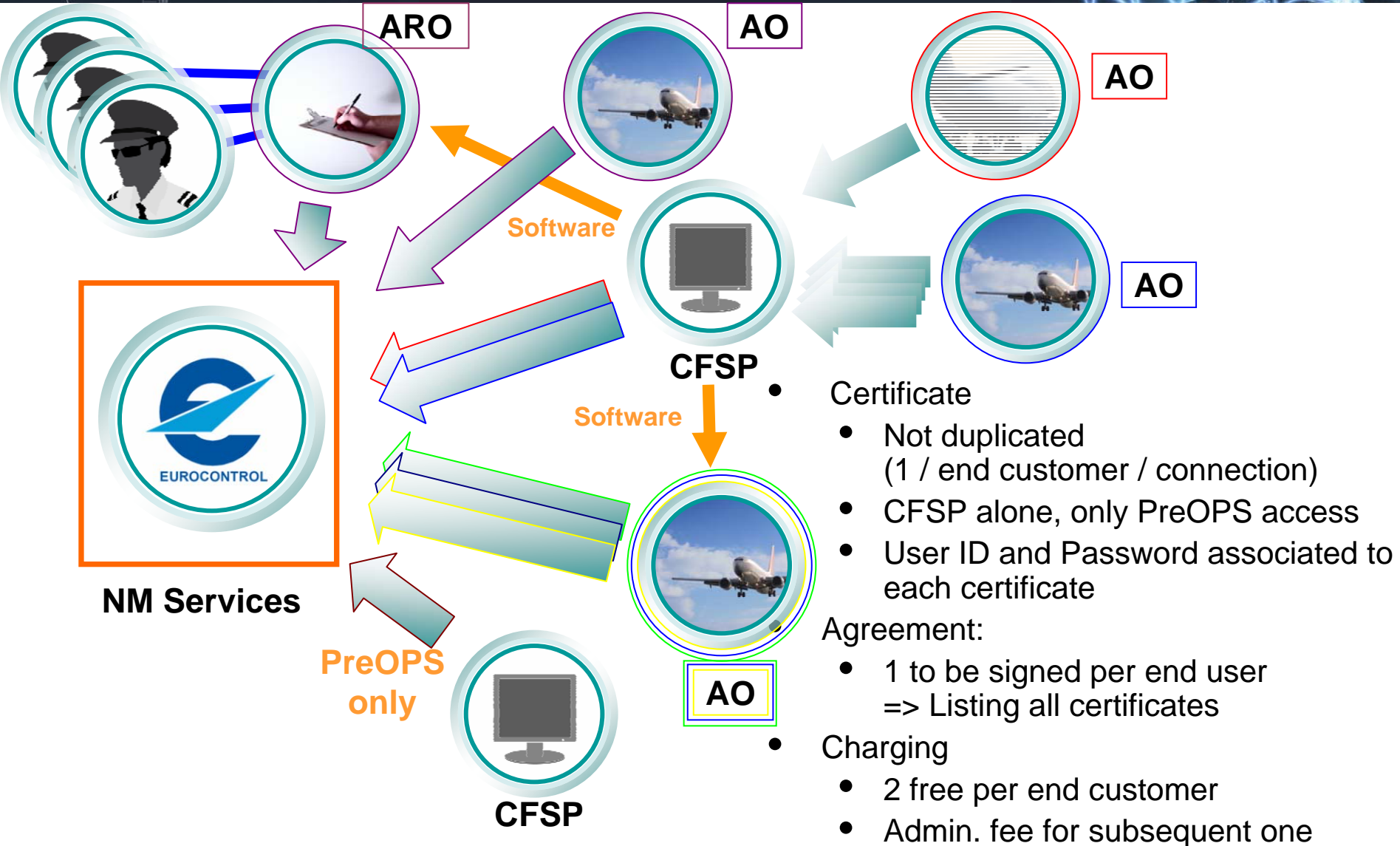
* RPC: Remote Procedure Call

- Simple and Powerful Solutions Based on Query/Reply
 - RPC paradigm is simpler than the publish/subscribe one
 - **consumer** remains a **client** application
 - **provider** remains a **server** application
 - **SLA** is well understood.
 - Also, the “subscribe” part vanished: the consumer requests **what it needs when it needs it**:
 - access to the NM information is not subject to any preliminary registration
 - only subject to what is exactly required at an exact moment in time.
- Same way as when querying information in the past:
 - consumer does not need to store the information on its side: NM stores that data already.
=> duplicate storage is not efficient and not recommended

In this paradigm, the consumer polls the NM to get the information that it needs, with two alternatives

- Registration handled by the consumer application
 - Consumer application has a publish/subscribe layer
 - Publish/subscribe layer registers the subscription information (callback, class of information requested)
 - The publish/subscribe layer polls the NM to check if there is new information available
 - When new data is available, the publish/subscribe layer invokes the callback of the upper layer
 - For the upper layer it is as if the Publish/Subscribe is done with the NM
- This solution can be readily used.
No new development by NM.**





- B2B Web Services Releases available:
 - SWIM Master Class (on NMVP) => Only NM 16.5
 - Operational systems => NM 15 and NM 16
- Web services paradigm
 - based on query/reply
 - Publish/subscribe only via your own intermediate layer
- Certificates (for Operational usage)
 - Not duplicated (1 / end customer / connection)
 - Only 1 connection per certificate at a time
 - CFSP alone, only PreOPS access

Questions?

