

Supporting
European
Aviation



PENS

The European Regional IP Network

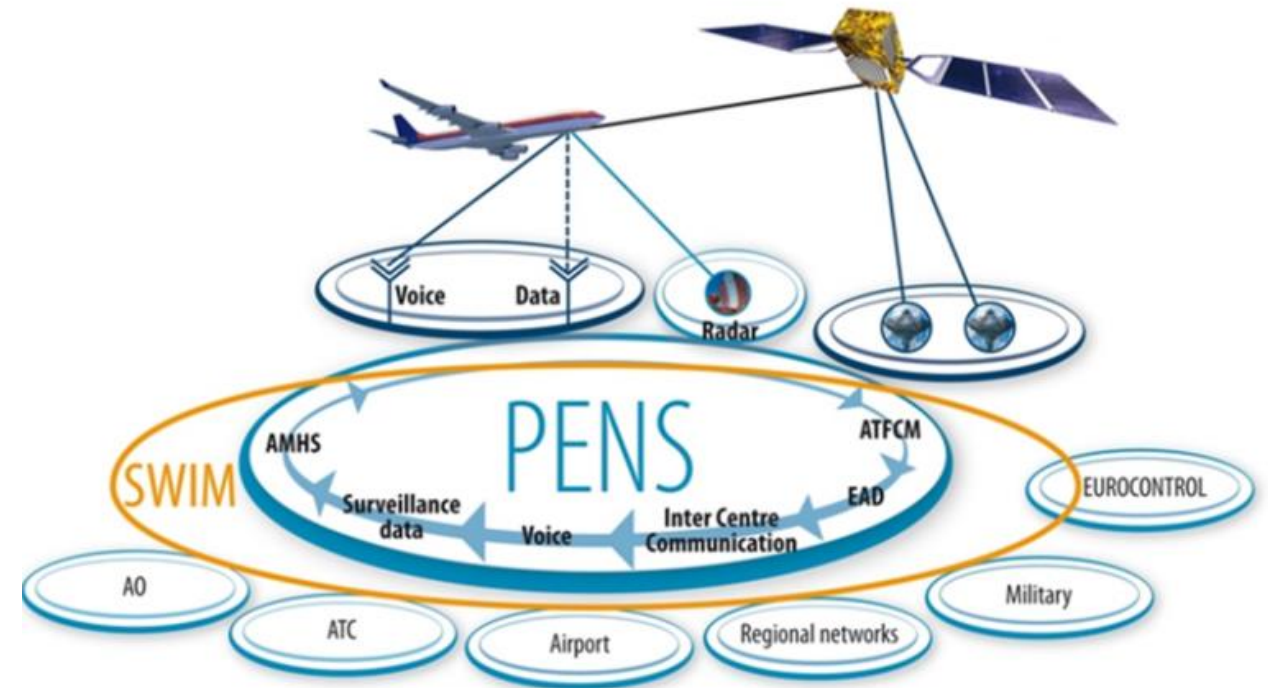
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EUROCONTROL – PENS Management Unit Lead
31 January 2023 – CRV Governance Workshop



PENS – The European Regional IP Network

Common European IP-transport Infrastructure for cross-border communication

- Key Technical Enabler for a sustainable and cost-efficient interoperable European Air Traffic Management (EATM) Network
- Provide large-scale IP-connectivity services for the safe, efficient and future proof transport of cross-border communication
- Enabler for inter-regional information exchange
- Address a wide variety of stakeholders



Supporting the Operations of the EATM Network by enabling the reliable, secure and safe exchange of critical and common ATM information among the PENS Users

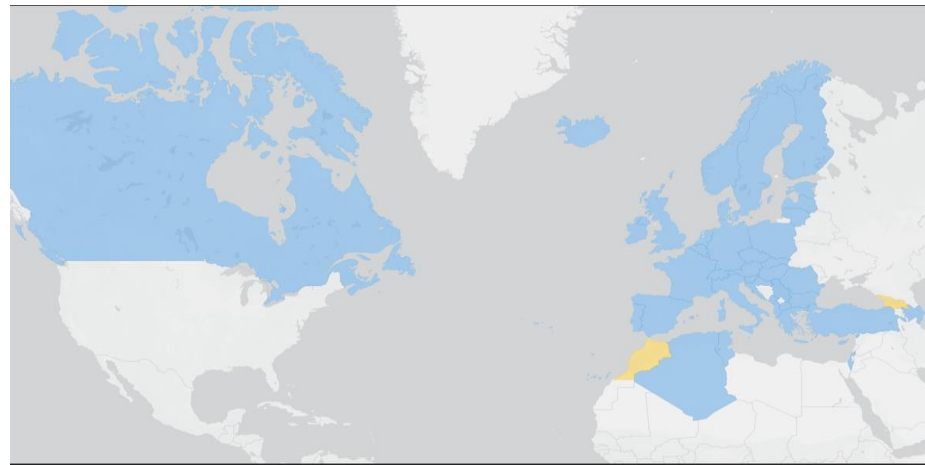
PENS – Vision, Mission and Ambition

- Create economies of scale, reduce fragmentation and help improve European and inter-regional interoperability
- **Service Provision organised under market conditions** whilst taking into account the safety demand of air space users (*procured under EUROCONTROL Contract Regulations / European Public Procurement Rules*)
- Open to the wider ATM community (civil/military, ANSPs, CSPs, meteo providers, industry partners)
- Offer differentiated IP connectivity services built upon standard telco(s) feature sets
- **User driven services through multi-stakeholder governance**
- Evolve with technology and business requirements
- **Pay per Use Principle – Strict Use Policy**
- Up to 99,99(9)* % availability – Cybersecurity precautions

(*) Consensus on how to best reach 5x9s on regional scale is to be achieved amongst EUR/NAT partners

PENS Users

January 2023



- Number of PENS Users: 44
- Pending deployment:
 - ✓ SAKAERONAVIGATSIA – ONDA – ESSP – KNMI

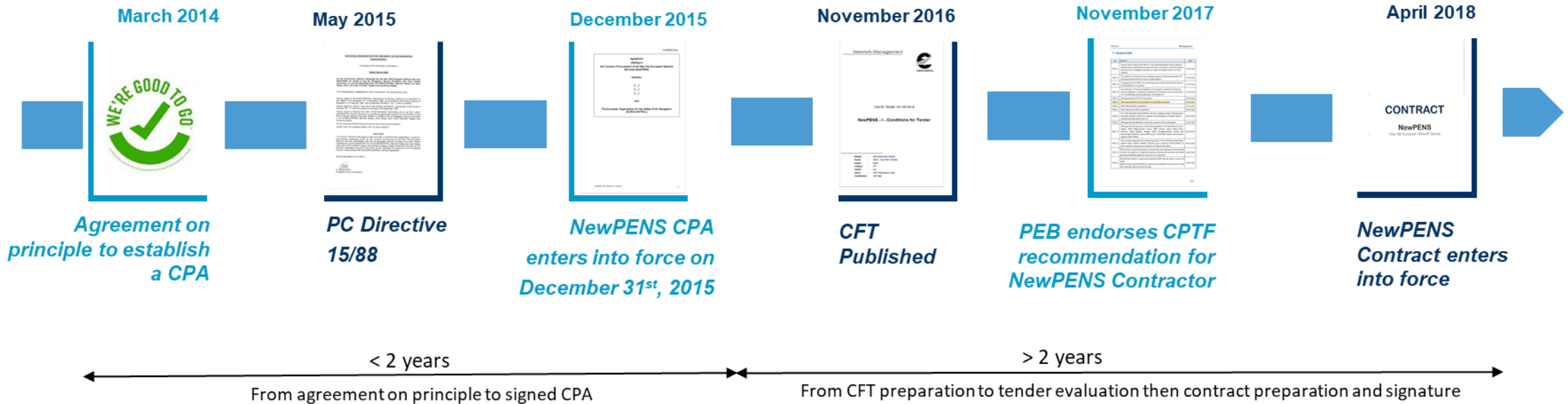
	NewPENS Users	Country		NewPENS Users	Country		NewPENS Users	Country
1-2	EUROCONTROL (NM - MUAC)		20	ENNA	Algeria		ONDA	Morocco (pending connection)
3	ALBCONTROL	Albania		ESSP	(pending connection)	36	ORO NAVIGACIJA	Lithuania
4	ANA	Luxemburg	21	FinTraffic ANS	Finland	37	PANSA	Poland
5	ANS CR	Czech Republic	22	IAA Ireland	Ireland	38	Ports of Jersey	Jersey
6	AUSTROCONTROL	Austria	23	IAA Israel	Israel	39	RNLAF	The Netherlands
7	AVINOR	Norway	24	ISAVIA	Iceland		SAKAERONAVIGATSIA	Georgia (pending connection)
8	AZANS	Azerbaijan		KNMI	The Netherlands (pending con.)	40	SKEYES	Belgium
9	BULATSA	Bulgaria	25	LFV	Sweden	41	SKYGUIDE	Switzerland
10	CROCONTROL	Croatia	26	LPS SR	Slovakia	42	SLOVENIACONTROL	Slovenia
11	DCAC	Cyprus	27	LGS	Latvia	43	SMATSA	Serbia and Montenegro
12	DFS	Germany	28	LVNL	The Netherlands	44	ROMATSA	Romania
13	DHMI	Republic of Türkiye	29	M-NAV	Republic of North Macedonia			
14	DSNA	France	30	MATS	Malta			
15	EANS	Estonia	31	NATS	United Kingdom			
16	ENAIRE	Spain	32	NAV Canada	Canada			
17	HCAA	Greece	33	NAV Portugal	Portugal			
18	HUNGAROCONTROL	Hungary	34	NAVIAIR	Denmark			
19	ENAV	Italy	35	OACA	Tunisia			

PENS – Timeline

- 2006-2007 – Opportunity arise to create a common IP network infrastructure to meet the needs of both EUROCONTROL and the ANSPs of the EUROCONTROL Member States
- EUROCONTROL was requested to conduct a Common Procurement on behalf of interested ANSPs
- 1st Call for Tenders published in November 2007
 - ✓ Contract awarded to SITA for 8,5 years, ending on June 7, 2018 – later extended for 2 years to accommodate the transition to the second-generation contract (NewPENS)
- 2^d Call for Tenders published in November 2016
 - ✓ Contract awarded to BT for 10 years end April 17, 2018
- 3rd Call for Tenders preparation anticipated to start in 2024
 - ✓ Anticipated timeline for 3rd generation contract awarding 2026

Procurement Timeline

NewPENS Example



The PENS Mandate

- Provided by the EUROCONTROL Member States
 - ✓ Vehicle: Directives of the EUROCONTROL Permanent Commission
- PENS Directives (*existing and in-preparation*) :
 - ✓ Directive 07/70 – dated 24 October 2007 – authorises the Common Procurement of PENS on behalf of EUROCONTROL and interested ANSPs
 - ✓ Directive 13/81- dated 12 July 2013 – extends the scope of PENS to other States within the ICAO EUR/NAT Region and bordering States
 - ✓ Directive 15/88 – dated 21 May 2015 – further enables the use of PENS by any interested Parties from the EUROCONTROL Member States and other States within the ICAO EUR/NAT Region and bordering States
 - ✓ *Directive xx/xx – pending approval – aims to instantiate the PENS Governance as unique and stable governance, provide the necessary tools to do multi-sourcing (establish different and complementary contracts) and enable access to the PENS Contract(s) to public and private entities of non EUROCONTROL Member States as well as international organisations*

The PENS (legal) Framework – Current

The Building Blocks

NewPENS Common Procurement Agreement (CPA)

= Code of Conduct, Governance & Charging Scheme



Contractual Element

- Stipulates the terms and conditions for the cooperation of the Parties in the procurement, development and operations of the PENS Contract and related sharing of cost and work
- How is the common procurement organised (roles and responsibilities, obligations of the Parties, applicable law/procedures.....)
- How is the contract governed/managed from procurement throughout the contract lifecycle



NewPENS Contract with BT

Via EUROCONTROL/Direct
(Managed Services)



Contractual Element

- Outcome of the common procurement process
- Common Contract to all contracting Parties (members of the CPA) established and administered by EUROCONTROL under EUROCONTROL Contract Regulations
- Each contracting Party in individually is a signatory to the Contract with BT

PENS Service Management Framework

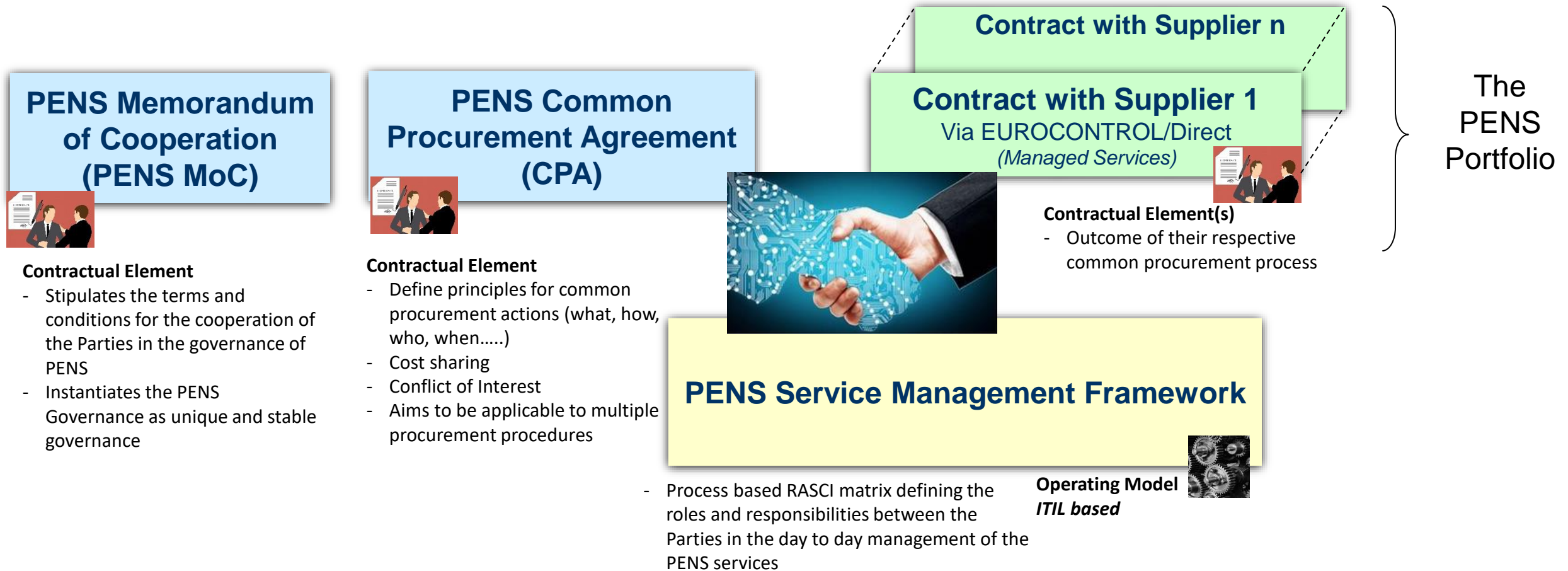
- Process based RASCI matrix defining the roles and responsibilities between the Parties in the day to day management of PENS

Operating Model
ITIL based



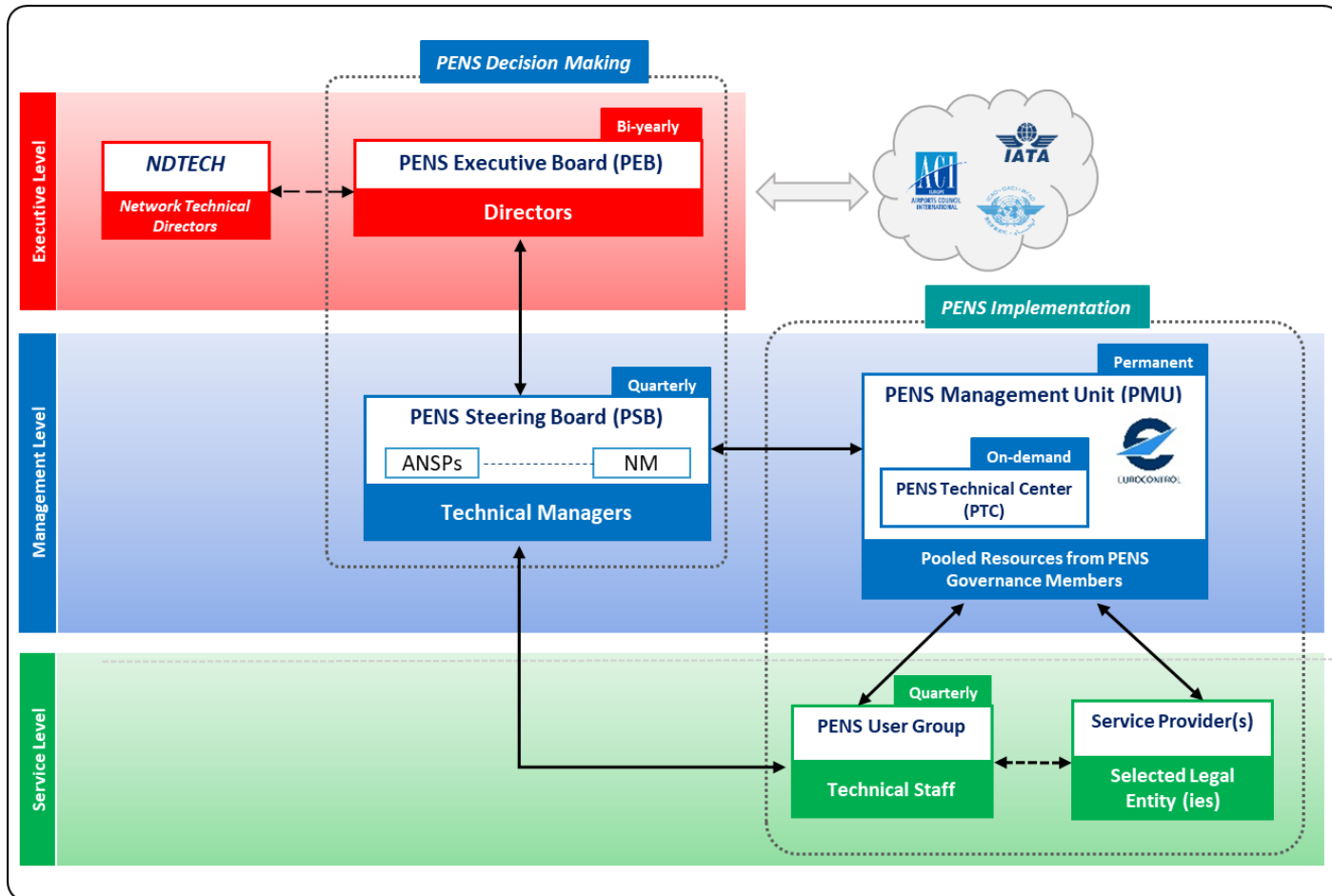
The PENS (legal) Framework – To-Be (work in progress)

From one Contract to a portfolio



The PENS Governance

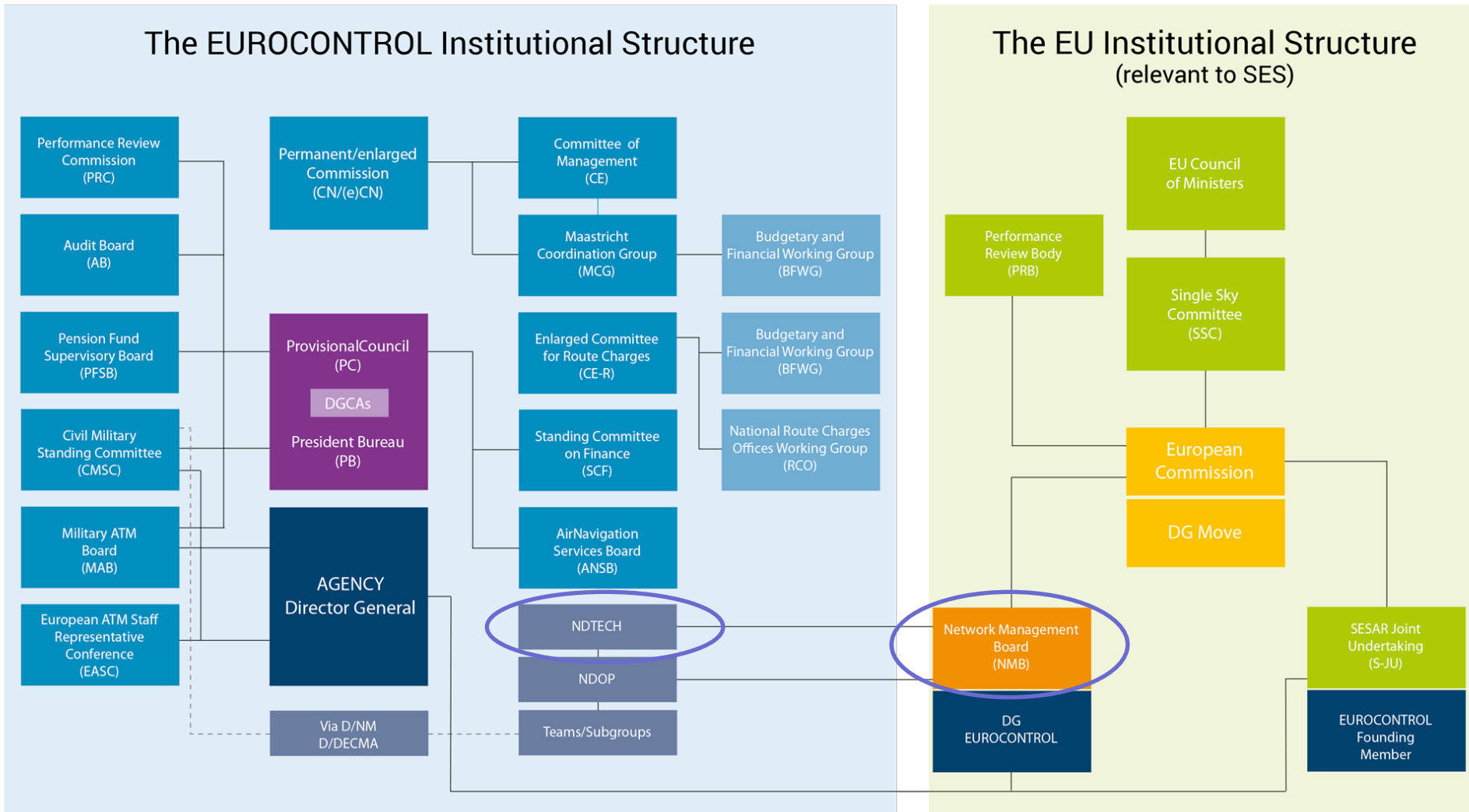
A User Driven Multi-Stakeholder Governance



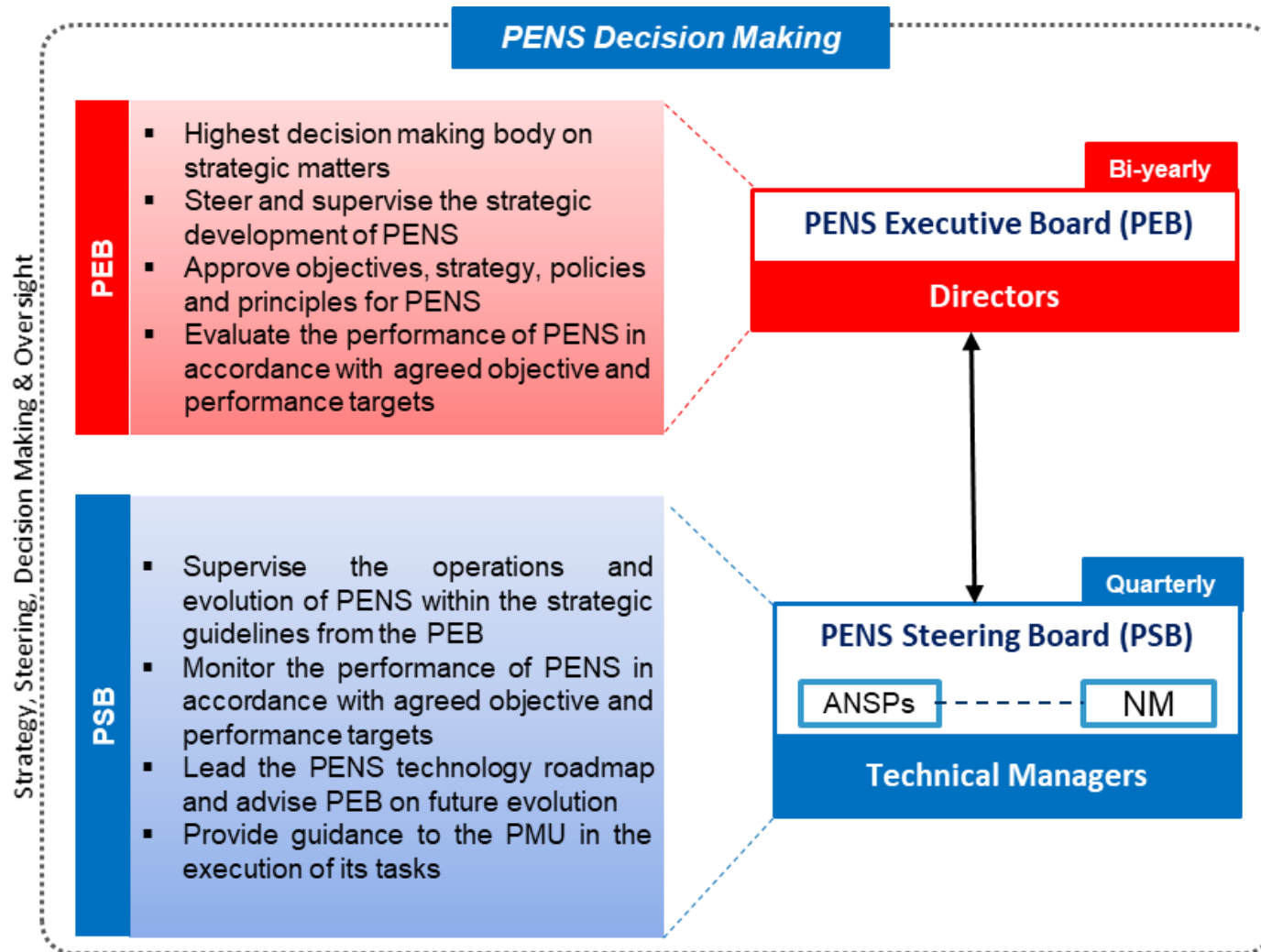
PENS Governance & Operating Model

- The PENS Governance manages the PENS Service Provision and the strategic needs of the users
- The strategic evolution of PENS is coordinated as part of the EUROCONTROL CDM working arrangements, with the Network Directors of Technology (NDTECH) group of the Network Management Board (NMB)

Overarching Institutional Structure

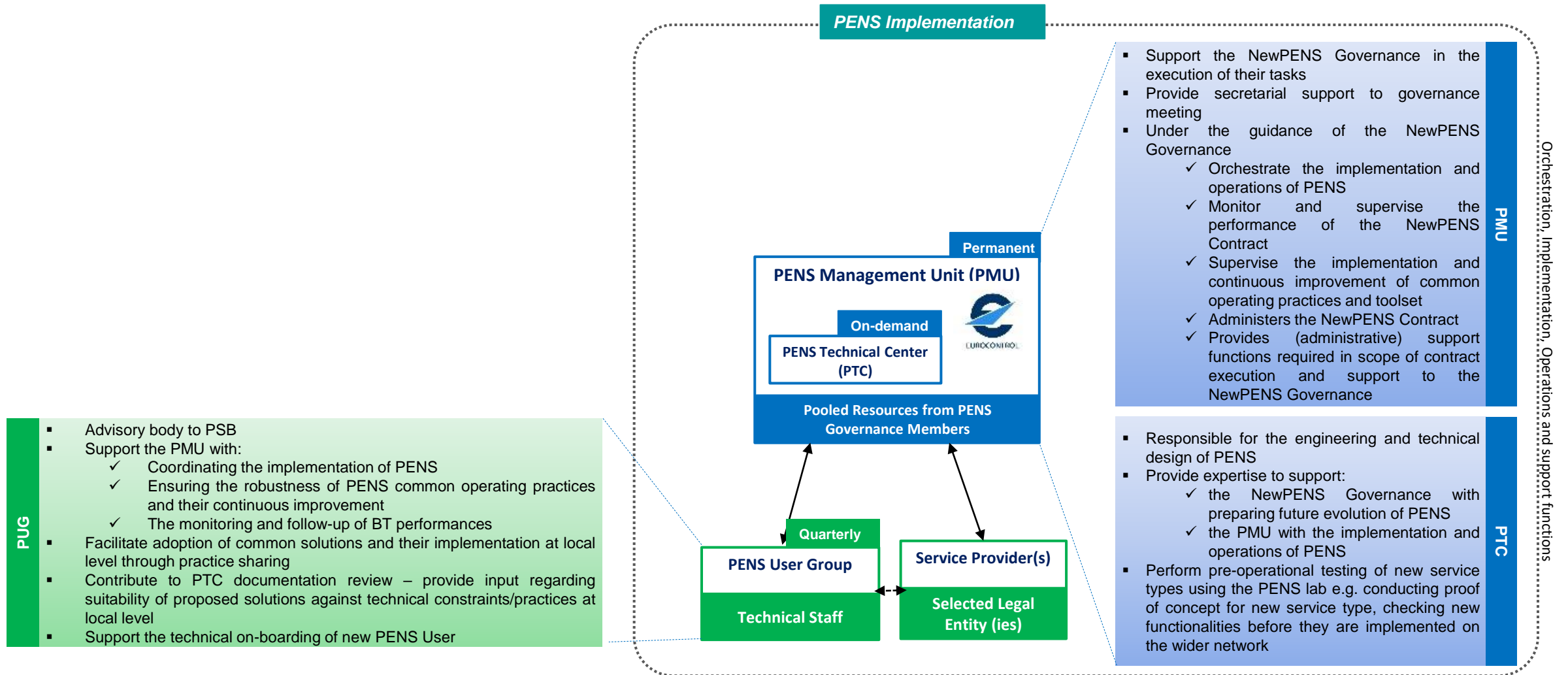


PENS Decision Making



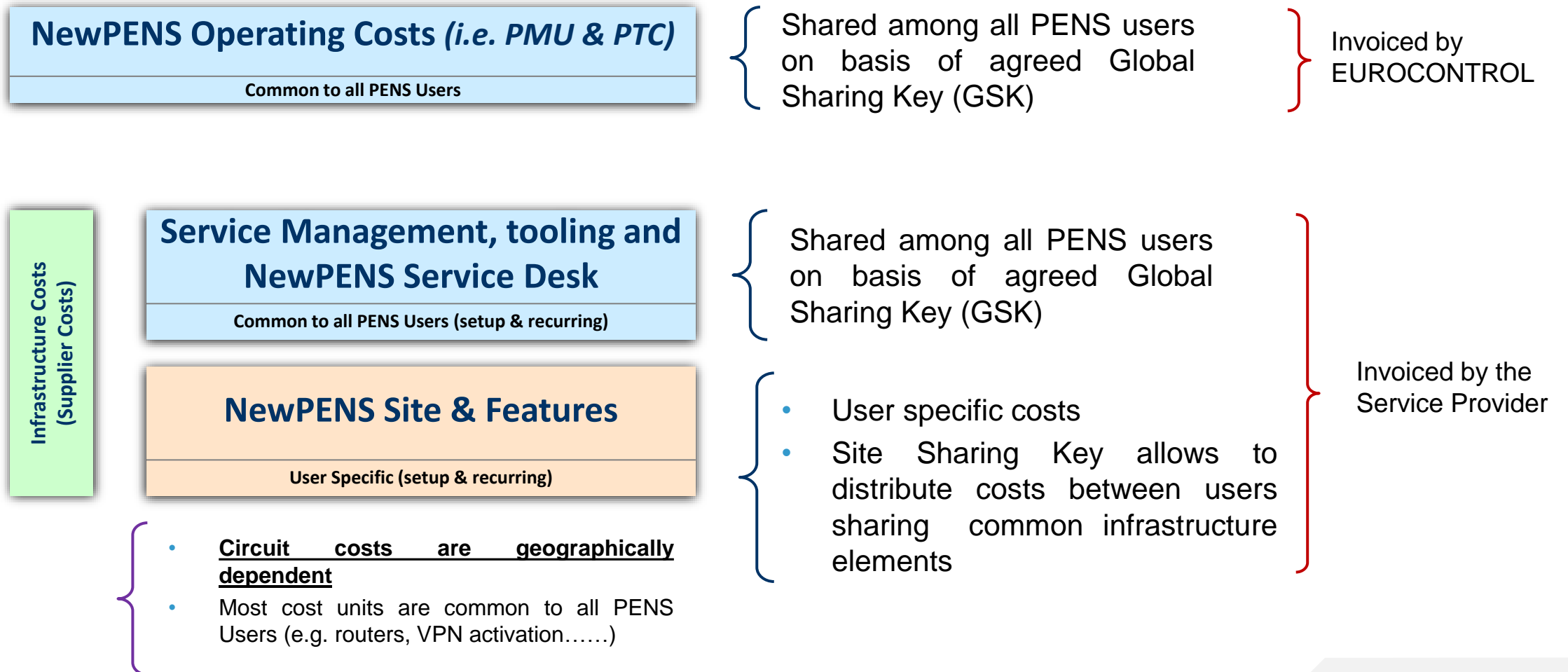
- Each board has a Chair and Vice Chair
- Decision is normally by consensus
- A voting procedure is foreseen as - exception mechanism - at the highest level
- PEB usually meets twice a year or upon request
- PSB meets on a quarterly basis

PENS Implementation (RUN)

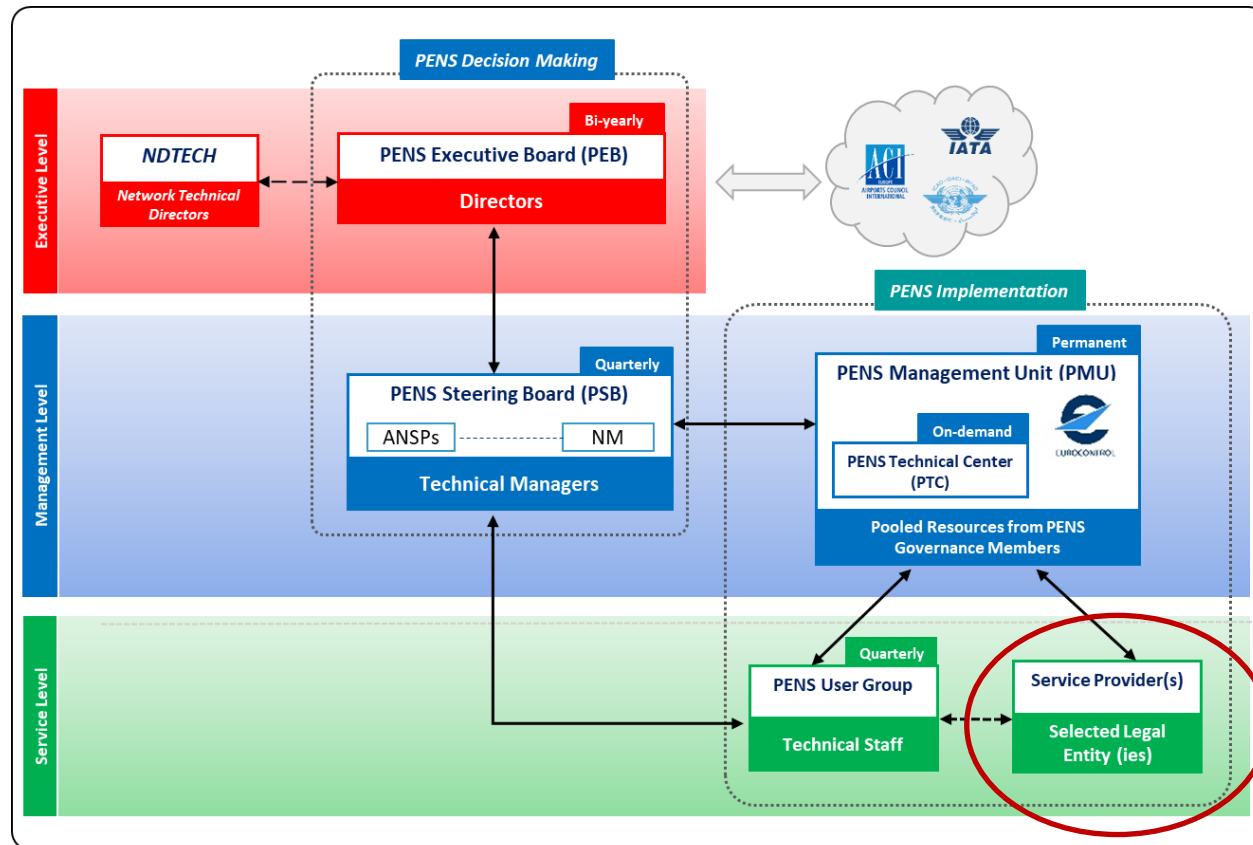


(New)PENS – Charging Scheme

Pay Per Use Principle



Embedding Service Provider Organisation in the (New)PENS Service Management Framework



PENS Governance & Operating Model

	PEB	NewPENS Boards	PMU	Service Provider	PTC	NewPENS User
Service Strategy						
Strategy Generation	A,R	S	C			C
Service Portfolio Management	A	R	S	S		C
Demand Management	A	R	S	S		
Financial Management	A	R	S	S		I
Service Design						
Service Level Management		A	R	R,S	C	I
• Service Measurement			A	R,S	C	C
• Service Reporting			A	R,S	C	C
• Service Analysis			A	R,S	C	C
Service Catalogue Management		A	R	S	C	I
Capacity Management			A	S	R	I
Availability Management			A	S	R	I
IT Service/Business Continuity		A	A	A	R	I
Information Security Management		A	R	S	S	I
Supplier Management		A	R	S	S	I
Service Transition						
Change Management		C	A,R	S	C	
Service Asset and Configuration Management			A	R,S		
Release and Deployment Management			A	R,S	C	
Validation and Testing Management			A	S	R	
Transition Planning and Support		A	R	S	S	C,I
Service Operations						
Incident Management			A	R,S		C,I
Event Management			A	R,S		I
Request Fulfilment			A	R,S		C,I
Problem Management			A	S	R	C,I
Access Management			A	S	R	I
Technical Management			A	S	R	
Operations Management			A	R,S		
Service Desk Function			A	R,S		
Continuous Service Improvement						
Continuous Service Improvement		A	R	S	C	I

R: Responsible – A: Accountable – S: Resource Allocated – C: Consulted – I: Informed
Table 3: NewPENS Process Framework RASCI

Q&As



Pre-requisites to joining PENS

- The requesting Party must be in scope of Directive N°15/88 dated 21.5.2015 of the EUROCONTROL Permanent Commission
- The right to use the network is formally granted by the PENS Governance on a per use case basis considering expected benefits for the EATM Network, costs, possible alternatives and potential risks.
- Core principle – What is not explicitly allowed by the PENS Governance is prohibited
 - Also, from requesting Party perspective, CBA to be considered

How does one practically become a PENS User

1. Pre-requisites to joining PENS
2. Contractual/Legal
 - ✓ Become a party to (sign) the Common Procurement Agreement and,
 - ✓ Become a signatory to the NewPENS Contract with the Service Provider (by accession amendment)
3. Order your connectivity to PENS / Order your PENS site
4. The Service Provider deploys the site then hands it over to the requesting Party after successful completion of basic acceptance tests (*community defined and agreed*)
5. Optional (strongly recommended): The requesting Party has then two weeks to perform extended acceptance tests (*community defined and agreed*) before the site is formally accepted.
6. Upon formal acceptance of the site the requesting Party becomes a PENS User and is ready to establish communication over PENS in accordance with approved used cases.

PENS Service Management Framework

The Operating Model

- To efficiently direct, manage, monitor and evolve the Pan European Network Service a comprehensive **Service Management Framework (SMF)** was put in place (*ITIL v3 based*)
- This SMF aims to provide the necessary organisational capabilities (i.e. resources, processes, functions and tools) to allow PENS to fulfil its business objectives and achieve the required levels of services.
- The direct benefits expected from the framework include:
 - ✓ Consistency of approach across all NewPENS users
 - ✓ Common policies and standards
 - ✓ Common service management processes, working practices and procedures
 - ✓ Operational efficiency
 - ✓ Streamlined communications between all parties involved
 - ✓ Ability to progressively achieve end-to-end service management.

PENS Service Management Framework

Some Key Processes and Functions

