Draft proposal of the timeline implementation iCAROS phase 2

Extension of new future-proof coordination and congestion management for all timeframe and for all type of grid users' assets connected to the Elia Grid

iCAROS = Integrated Coordination of Assets for Redispatching and Operational Security
6 June 2023

DISCLAIMER

This document is a draft version proposed by ELIA with the aim of being a starting point for discussion.

It is subject to future revision based on the input collected during public consultation and consequent alignment with the regulating authority as well as interactions with other implementation timelines of other Elia roadmaps that would require a review of the initially proposed timeline for iCAROS phase 2. This document has no legal power or consequence. ELIA is not responsible nor liable for any conclusion or action based on the information contained in this document.

It is also subject to future revision due to delays of the go live of iCAROS phase 1

Abbreviations

Abbreviation	Full Name
BRP	Balance Responsible Party
CEP	Clean Energy Package
CRI	Congestion Risk Indicator
DA	Day-Ahead
DSO	Distribution System Operator
EBGL	Electricity Balancing Guideline
FTE	Full-Time Equivalent
GU	Grid User
ID	Intraday
LT	Long Term
OPA	Outage Planning Agent
RD	Redispatch
ROSC	Regional Operational Security Coordination
RT	Real Time
SA	Scheduling Agent
SOGL	System Operational Guidelines
T&C	Terms & Conditions
TSO	Transmission System Operator

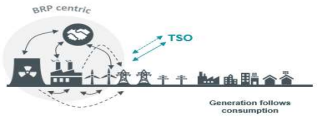
Context

Powering society towards clean electrification => iCAROS focus on impact on operational data exchanges processes with grid users

+10TWh

+20TWh

+10TWh



Different roles are introduced BRP, BSP, SA, OPA, …

READY FOR **50%** INCREASE **BY 2032**

- Reliable
- Affordable
- Sustainable

November 2020

November 2021

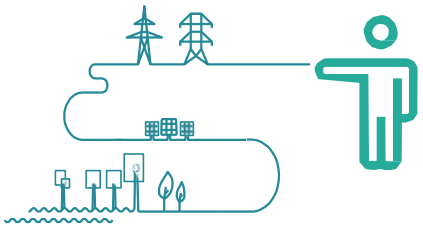
November 2022

iCAROS = Integrated Coordination of Assets for Redispatching and Operational Security

Business Scope

Exchange of operational data [from LT to RT]

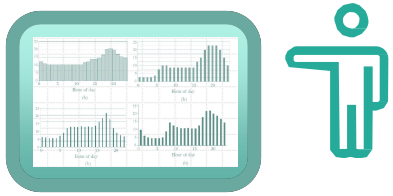
Outage Planning of grid users' assets



Provision of availability statuses and active power restrictions

Available (A)	Unavailable (U)	Testing (T)
	Forced Outage (FO)	

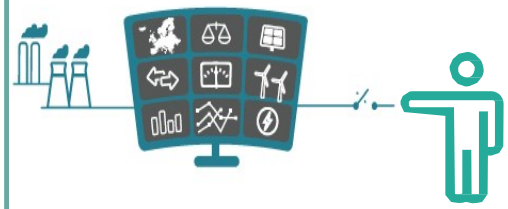
Scheduling of grid users' assets



Provision of active power schedules

	00.00	00.15	.....	23.30	23.45
Schedule (MW)	-45,1	-42,2	.....	-45,1	-42,2

Congestion management – costly RD provided by grid users assets

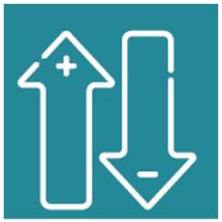


Provision and activation of redispatching bids (active power upwards and downwards)

Delivery point(s)	DP1
ID	RD001
Direction	Upwards
Bid price	50 € / MWh
(max) Bid volume	100 MW

Operational data exchanges processes with grid users is an essential part of a broader exercise aiming at ensuring grid security

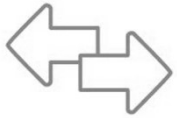
Adequacy check



Detection of operational security issues

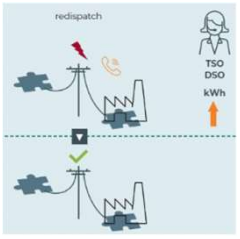
Planning of works on the Elia grid

Calculation of cross-border capacities



Risk assessment for unavailability of Ancillary Services

Providing one of the means for mitigation of congestion issues



The Coordination and Congestion Management of system relevant assets of grid users, new way of working : the iCAROS project

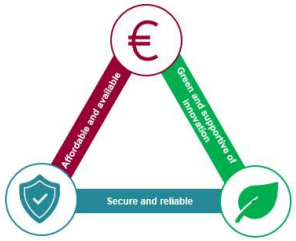
Goal

Ensure an **efficient and modern** coordination and congestion management

Why?

To expand the coordination and congestion management to **all system relevant asset** types of grid users and to **all levels**

To be **compliant with European legislation** (SOGL, CEP, EBGL)



To **split roles and responsibilities** in the market

How?

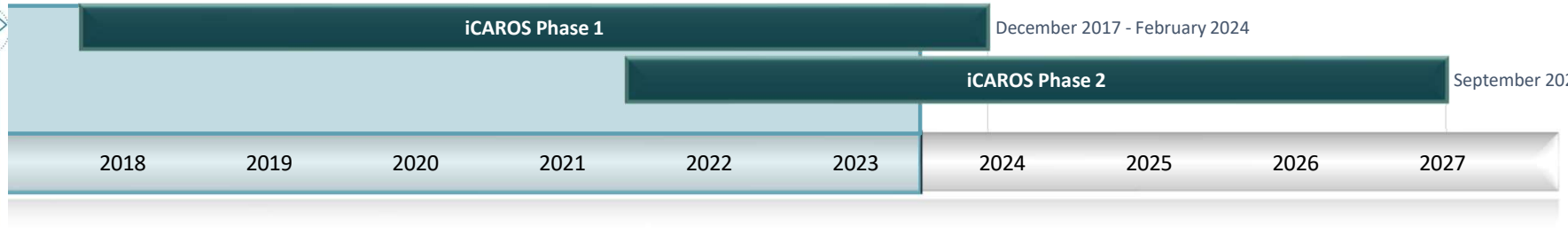
The implementation of a **new up scalable state of the art design** & a **new contractual framework**

iCAROS Phased Implementation : focus of phase 2 is extension of new future-proof coordination and congestion management for all timeframe and for all type of grid users' assets connected to the Elia Grid

Best response as TSO to make electrification happen

Pillar 3

Unlock consumer flexibility to follow variable RES



Phase 1
Q1 2024

- large TSO production units (≥ 25 MW) and inclusion of batteries

Phase 2
2025 -2027
Multiple sprints
TSO/DSOs co-creation

- TSO production units (≥ 1 MW)
- Voluntary for TSO load (except operational planning)
- Operational planning for production DSO units (≥ 1 MW)

Phase 3
2027 -
Multiple sprints
TSO/DSOs co-creation

- TSO & DSO production units (≥ 1 MW)
- Voluntary for TSO load (except operational planning)

iCAROS

Hypothesis

Hypothesis for constructing a timeline for iCAROS phase 2

1. The implementation of Icaros phase 1 started end 2017 (11/12/2017 – start public consultation initial design notes) and will take up to February 2024 (initial go-live date WG Balancing 27/11/2019 – Q1 2022) while phase 1 focuses “only” on larger production units (≥ 25 MW) already today impacted by the T&C OPA and the T&C SA. In phase 2, the implementation will focus on the introductions of new designs for small production units (≥ 1 MW and < 25 MW) and demand facilities as such an exponential increase of the number of assets and (new) impacted market parties is assumed compared to iCAROS phase 1. As such a timing like the implementation trajectory of iCAROS phase 1 is assumed as realistic.

2. Based on the public consultation regarding the evolution of the BRP Nominations (public consultation from 15 September 2022 to 13 October 2022) the target design for the BRP Nominations is to be implemented in one step together with iCAROS phase 2. As such the implementation, needed to enable different parties to take up the role of BRP and SA, is proposed to be postponed until the full go live of iCAROS phase 2.

Hypothesis for constructing a timeline for iCAROS phase 2

3. No timing regarding regulatory trajectory has been included in the slides (min lead time for formal trajectory - public consultation – drafting of consultation report – regulatory decision (excluding the drafting of the regulatory documents and pre-alignment) : 4 up to 6 months).

4. Design fine-tuning process – same FTEs working on multiple common projects identified in the framework of different Elia roadmaps at the side of market parties and Elia for product evolution, consequently
   - The different design packages need to be developed in batch
   - Operational urgencies requiring the same FTEs in general go before fine-tuning of new design
   - Additional timing limitations :
     - not during one month of freeze before GO-live of a common project
     - not during on-going public consultation process of a common project

Hypothesis for constructing a timeline for iCAROS phase 2

5. No operational Go-Live (including one month of operational availability after go-live) during holiday periods is preferred and as such Go-Lives take place at least one month before holiday periods if feasible given different holiday plans in Flanders and Wallonia.

6. Sufficient testing possibilities for service providers
   - Can only be launched after all implementation done at Elia side needed for interaction with service providers and minimum one month of freeze before go live is respected.
   - Ends at the earliest 6 months after all implementation done at Elia side

7. Timing for the implementation of cocreation with DSO is out of scope, however an alignment with DSOs on a unique solution for small production units (≥ 1 MW and < 25 MW) is a prerequisite to avoid huge implementation costs for market parties.

8. IT-implementation is limited to an assessment of the implementation for Elia

Changing regulatory framework

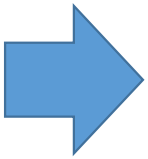
Changing regulatory context that influence the implementation of iCAROS phase 2

- The **Belgian local governments and regulators** are still reviewing and fine-tuning their vision regarding coordination and congestion management. Given that iCAROS phase 2 focuses on the design of demand facilities and small generators that are typically connected to the local grid the impact of this changing Belgian local regulatory vision needs to be repeatedly assessed.
- The European Union Agency for the Cooperation of Energy Regulators (ACER) has prepared pursuant to Article 59.1(e)of Regulation (EU)2019/943('Electricity Regulation') and based on the request from the European Commission a draft Framework Guideline on Demand Response. It will need to be assessed whether fine-tuning of the design of iCAROS phase 2 is needed when the **final Guideline on Demand Response** comes into force.
- …

Content of iCAROS phase 2

PHASE 1 – FOCUS on big production units – modernization & upscalibility of existing DA & ID data exchange processes

- DA & ID review of data exchange – availability plans for big production units including the introduction of new SOGL terminology
- DA& ID review of existing scheduling for big production units – introduction of quality checks
- Introduction of gate closure time (GCT) for schedules and the return to schedule for big production units
- Introduction of the concept of freedom of dispatch till GCT for schedules
- Introduction of cost-based explicite redispatch bidding aligned with explicite bidding for mFRR for big production units
- activation control, activation remuneration and correction of BRP perimeter in line with new design of the redispatching process for big units and assuming BRP is still performing the rol of SA
- Introduction of a structural methodology to calculate Congestion Risk Indicator (CRI)
- Introduction of data quality checks between different data exchanges – facilitating learning at market parties side to facilitate splitting of OPA and SA responsibilities



PHASE 2 –Extension of new future-proof coordination and congestion management for all timeframe and for all type of grid users' assets connected to the Elia Grid

- LT review of data exchange (year N-m) – availability plans for big production units including the introduction of new SOGL terminology
- New data exchanges for status reservation and testing to be exchanged for big production units in the framework of the availability plans
- Elimination of double data flow, more specific the data exchange in the framework of ETP (ENTSO-e Transparency Platform) and the OPA data flow
- Structural data & appointment of OPA and SA in connection agreement
- Automatisation of the contractual data flows (including updates)
- New data exchanges for all timeframes (LT,DA & ID) for availability plans for small production units and demand facilities in line with new SOGL terminology
- Amendments to the nomination process and the BRP Contract to enable the GU to take up the role of SA or appoint a third party different from its BRP to take up this role
- Modification of legal framework national as well as local in order to allow the transfer of the schedule obligation for demand facilities connected to Elia Grid towards SA
- The enduring solution for the split of roles of SA and BRP
- New data exchanges DA& ID of scheduling for small production units & demand facilities – introduction of quality checks
- Introduction of cost-based explicite redispatch bidding aligned with explicite bidding for mFRR for production units & demand facilities (portfolio bidding for small units in mFRR)
- activation control, activation remuneration and correction of BRP perimeter in line with new design of the redispatching process for small and big units and demand facilities assuming BRP is no longer performing the rol of OPA and SA
- Extension of CRI to local (< 150 kV up to 36/30 kV) and DSO grid
- Local Remedial Action optimizer for congestion management
- Introduction of data quality checks – facilitating learning of operational processes for new market parties

Phase 2 : overview of packages of iCAROS implementation phase 2

- **Group A : Extend coordination and congestion management to European regional design (ROSC) and Local & DSO grid :**
  - Prerequisite 1 :
    Development of a local coordination and congestion management vision
  - Package 1 : Extension of CRI to local (< 150 kV up to 36/30 kV) and DSO grid
  - Package 2 : Local Remedial Action optimizer
- **Group B : Full design OPA**
  - Package 3 : Full design availability plan for ≥ 25 MW production units all timeframes and adding new features (status reservation & exchange of testing information)
  - Prerequisite 2 : <25 MW and ≥ 1 MW production units + demand facilities :
    Structural data and appointment of OPA/SA included in connection agreement & automatisation of the linked data flows
  - Package 4 : Split of roles OPA and BRP
  - Package 5 : Extension of Design availability plan for <25 MW and ≥ 1 MW production units + demand facilities
- **Group C : Full design SA (including redispatching)**
  - Prerequisite 2 : <25 MW and ≥ 1 MW production units + demand facilities :
    Structural data and appointment of OPA/SA included in connection agreement & automatisation of the linked data flows
  - Prerequisite 3 : perform the necessary amendments to the nomination process and the BRP contract to enable the Grid User (GU) to take up the role of SA
  - Prerequisite 4 : Modification of legal framework national as well as local in order to allow the transfer of the schedule obligation for demand facilities connected to Elia Grid towards SA.
  - Package 6 : Split of roles SA and BRP
  - Package 7: Extension of design scheduling & redispatching towards ≥ 1 MW and < 25 MW production units and for demand facilities connected to Elia grid

Proposed Release Scenario of the different packages of iCAROS implementation phase 2

Consideration for the sequence of the implementation of the different packages of iCAROS implementation phase 2

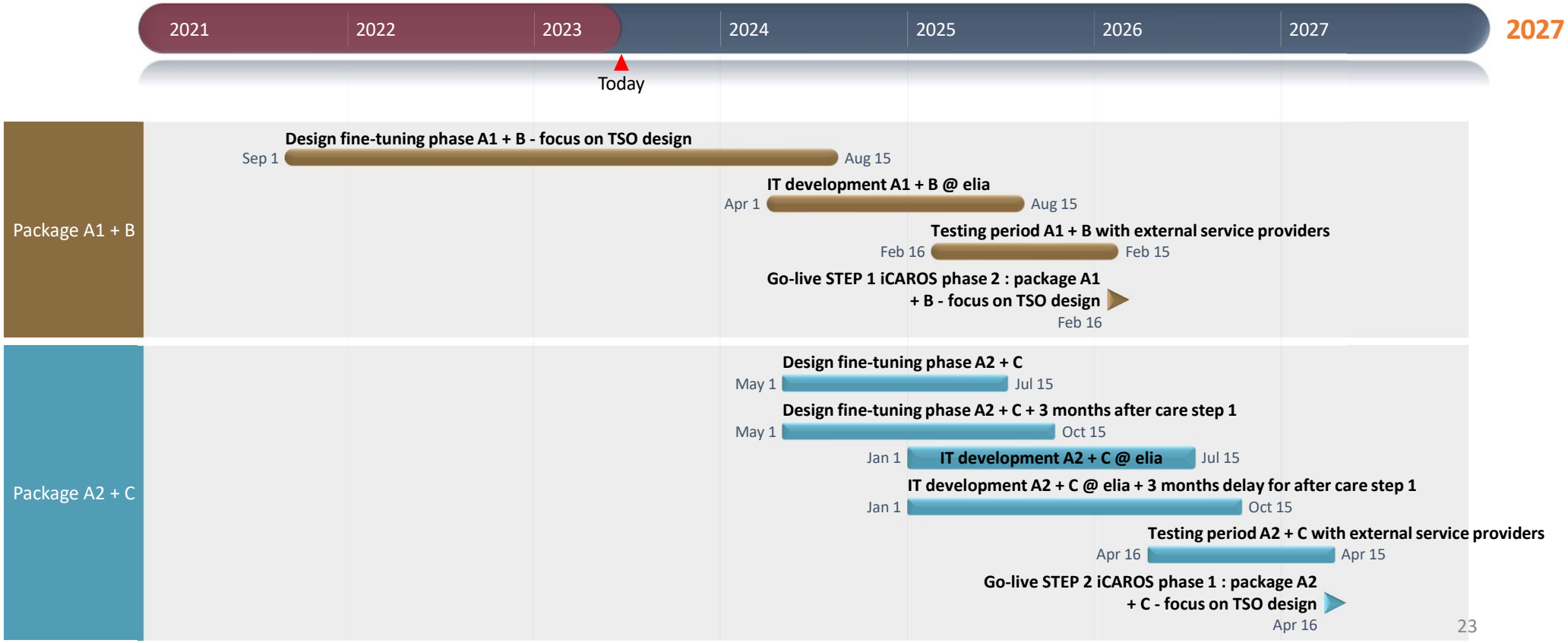
- The financial consequences for market parties: the implementation of the iCAROS design means getting market parties on board for a service for the benefit of society – ensuring operational safety of the grid - but triggering additional individual costs for those market parties providing this service. As such development for individual market parties will only be triggered if absolutely needed for the operational safety of the grid.
- The design extensions for the CRI (Group A -package 1) and OPA (Group B)
  - DSOs have indicated these designs as most important to them and an alignment is foreseen between the DSOs and Elia (in the framework of SYNERGRID)
  - These designs are the least complex
  - Limited financial impact for service providers
- Logical sequence of modifications in operational processes. The OPA design for small production units and demand facilities need to be in place in order to implement scheduling and RD bids. Scheduling and RD bids need to be in line with the information provided by the OPA (availability of assets).
- Extending the new data exchange relevant for OPA to all timeframes is viewed as beneficial for all impacted parties.
- Internal and external preference to avoid big bangs - Not too much in one go-live (after care after a go-live is needed to be included in the planning after each intermediate go-live)
- Limit the number of regulatory reviews : by grouping amendments of T&C OPA on the one hand and amendments for T&C SA on the other hand

Proposed release scenarios for packages of phase 2 assuming a sequential development

- STEP 1
  - **GROUP A1 (Extension of CRI to local (< 150 kV up to 36/30 kV) and DSO grid)+ Group B (Full design OPA)**
    - Prerequisite 1 :
      Development of a local coordination and congestion management vision
    - Group A1 : Extension of CRI to local (< 150 kV up to 36/30 kV) and DSO grid
    - Prerequisite 2 : <25 MW and ≥ 1 MW production units + demand facilities :
      Structural data and appointment of OPA/SA included in connection agreement & automatisation of the linked data flows
    - Group B Full design OPA
  - Development A1 + B
  - Integrated testing with external service providers : Mid Feb 2025 – Mid Feb 2026
  - **Go Live Q1 2026**
- 3 month of after care after go-live of step 1
- STEP 2
  - **GROUP A2 (Local Remedial Action optimizer) + Group C (Full design SA (including redispatching))**
    - Group A2 : Local Remedial Action optimizer
    - Prerequisite 2 : <25 MW and ≥ 1 MW production units + demand facilities :
      Structural data and appointment of OPA/SA included in connection agreement & automatisation of the linked data flows
    - Prerequisite 3 : perform the necessary amendments to the nomination process and the BRP Contract to enable the GU to take up the role of SA
    - Prerequisite 4 : Modification of legal framework national as well as local in order to allow the transfer of the schedule obligation for demand facilities connected to Elia Grid towards SA.
    - Group C : Full design SA
  - Development A1 + C
  - Integrated testing with external service providers : Mid April 2026 – Mid April 2027
  - **Go Live Q2 2027**

The proposed timing assumes the same alignment process as for phase 1. However new actors come into play. Big amount of market parties not used to data exchanges in the framework of operational security issues and alignments with DSOs in order to ensure a unique product

It is assumed that regulatory approval process with all NRAs is finalized one month before the operational go-live



Annex : detailed information regarding packages of iCAROS implementation phase 2

Disclaimer : the detailed information regarding packages does not include the impact of after care of 3 months after the go-live of step 1

Group A : packages linked to extend coordination and congestion management to European regional design (ROSC) and Local & DSO grid

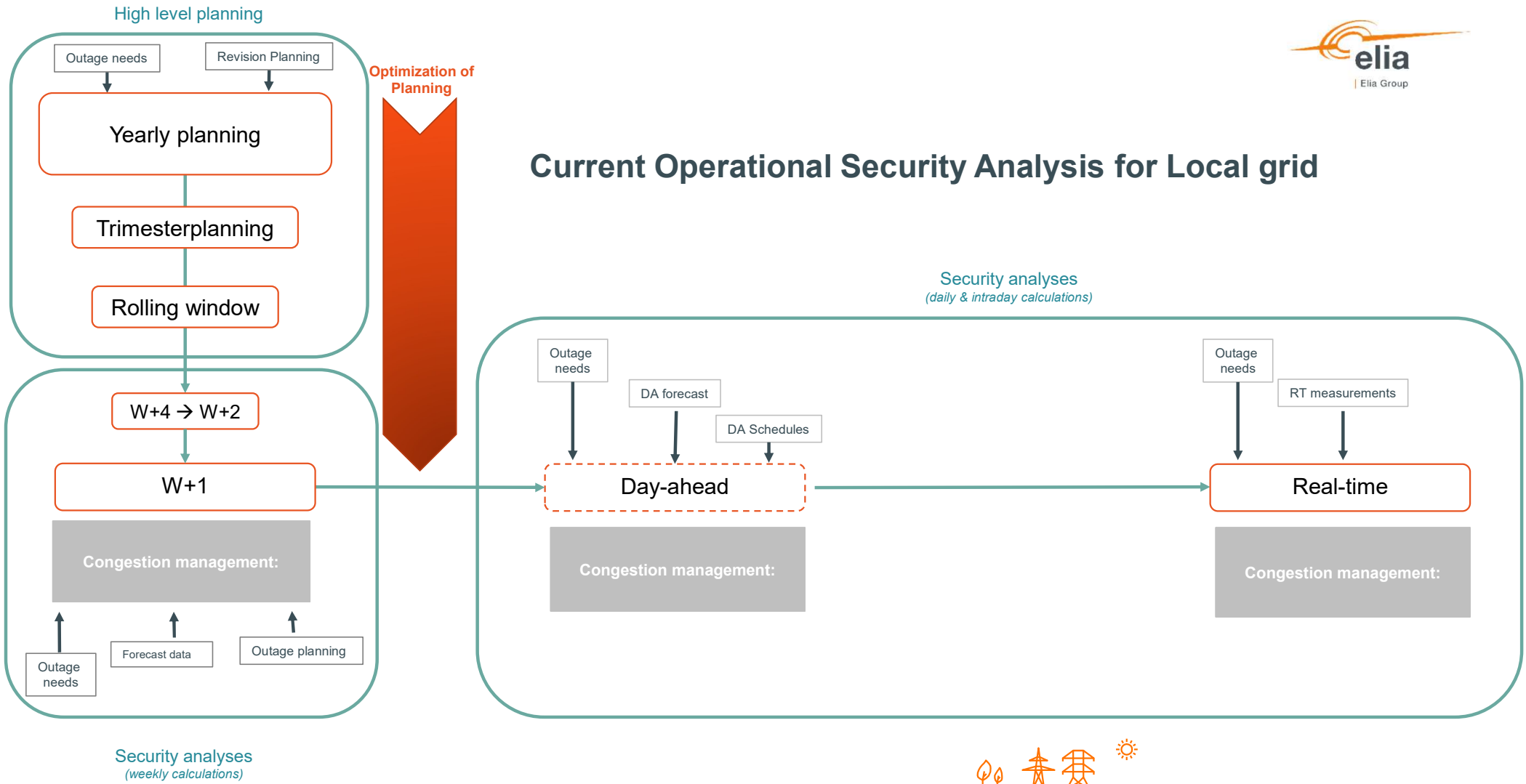
Packages linked to extend coordination and congestion management to European regional design (ROSC) and Local & DSO grid :

- Prerequisite 1 :
  Development of a local coordination and congestion management vision
- Package 1 : Extension of CRI to local (< 150 kV up to 36/30 kV) and DSO grid
- Package 2 : Local Remedial Action optimizer

Prerequisite 1 :
Development of a local coordination and congestion management vision

- The current operational security analysis processes for local grid (< 150 kV up to 36/30 kV) need to be reviewed given the increasing number of assets of grid users being connected to the local grid with a dynamic injection and load profile
- Demand facilities and small generators are typically connected to the local grid as such the design finalization in the framework of iCAROS phase 2 for this type of assets should match the operational security analysis need for the future operational security analysis processes for local grid
- ICAROS phase 2 influences especially the operational security analysis processes for local grid with a direct link to congestion management as indicated on the next slide.

Current Operational Security Analysis for Local grid



Day-ahead process is today a non-automated operational process triggered when needed

Package 1 : Extension of CRI to local (< 150 kV up to 36/30 kV) and DSO grid

- What is the Congestion Risk Indicator (CRI)
  - The CRI represents the congestion risk in an electrical zone (today level determination focus on the national grid (≥ 150 kV))
  - The CRI is used as a filter on activations of energy of contracted & non-contracted aFRR/mFRR
  - Due to freedom of dispatch, the CRI will not block Schedule Amendments up to GCT (45 min before RT)

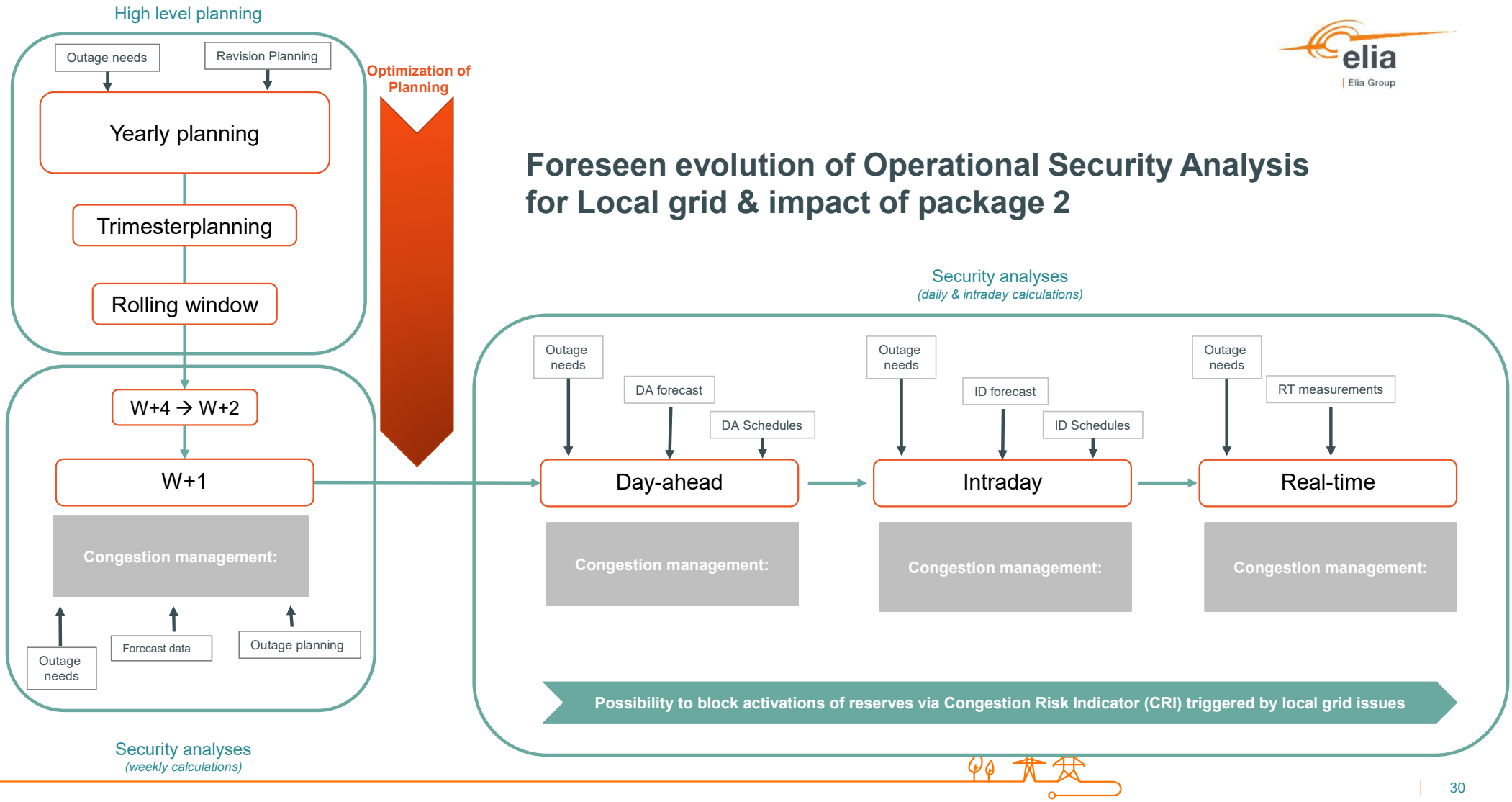
- The development of a CRI for local grid (< 150 kV up to 36/30 kV) is needed to avoid that actions by Elia or Market Parties would aggravate a congestion issue on lower voltage levels (< 150 kV up to 36/30 kV) **given the increasing number of assets of grid users being connected to the local grid with a dynamic injection and load profile** an inclusion of the operation security analysis of this local grid in the CRI is becoming a higher priority.

- When the CRI for local grid is developed it need to be integrated with current CRI that only reflects congestion issues on the national grid (≥ 150 kV).

- The need and timing for the development of CRI for the different DSO grids will be assessed by the different DSO and will be developed by the different DSOs according to a similar methodology.

- When a CRI for a DSO grid is developed it need to be integrated with the CRI that is relevant at that time

Foreseen evolution of Operational Security Analysis for Local grid & impact of package 2



External elements that influence package 2 Local Remedial Action optimizer : Core Regional Operational Security Coordination (ROSC)

- Congestion management vision of the European CORE region, namely the Core Regional Operational Security Coordination (ROSC) developed in line with Commission Regulations (EU) 2015/1222 (CACM) and 2017/1485 (SOGL).
- Three methodologies were approved by ACER in 2020 to set out:
  - the principles for ROSC,
  - the coordination for activation of the remedial actions (RAs) for fulfilment of the operational security limits (on 220-380kV grids)
  - and a cost sharing (CS) solution for redispaching and countertrading.

Key principles of the methodology:

CROSA =Coordinated Regional Operational Security Assessment

- Coordinated security assessment at Core level, consisting of remedial action optimization (RAO) step

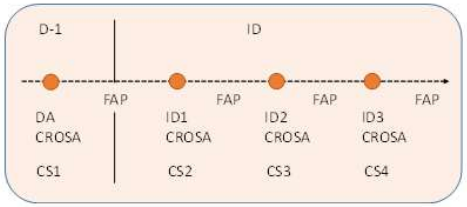
FAP = Fast Activation Process

- Direct coordination with affected TSOs

Process (see graph):

- 1x CROSA in day-ahead
- 3x CROSA in intraday (at least)
- FAP can be used where CROSA is not possible (due to timing constraints or no more CROSA)
- 1x Cost Sharing (CS) process for each CROSA

ROSC process



Implementation:

Final methodology was adopted by ACER on **04/12/2020**.

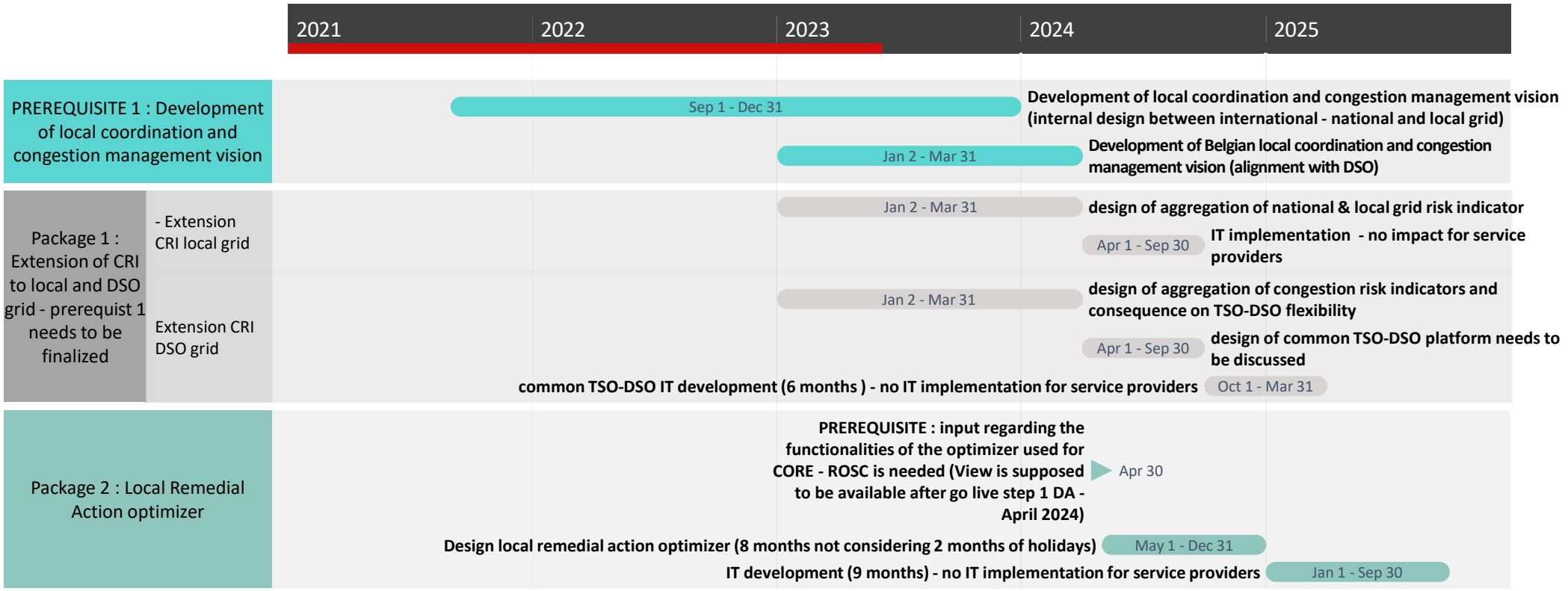
1. Version 1 solution consisting of DA CROSA only linear – activation of RD bids & PST optimalizations - Remedial Actions (RA) (non linear RA –- topological measures being optimized outside CROSA). (**target go live April 2025**).
2. Version 2 solution = 1 DA CROSA + 3 ID CROSA only linear Remedial Actions (RA) (non linear RA being optimized outside CROSA) (**target go live 6 to 12 months after go-live Version 1**).
3. Version 3 solution = 1 DA CROSA + 3 ID CROSA linear Remedial Actions (RA) and non linear RA (**target go live some months after go-live Version 2**).

Package 2 : Local Remedial Action optimizer

- Today Elia applies the principles as described in the coordination rules, however, Elia does not have a Local Remedial Action optimizer to assist the national operational security analysis.

- Today given the limited number of assets providing redispatch services (including after go-live of iCAROS phase 1); the operational security operator knows the impact on operational security of an activation of an assets. But given the increasing number of assets of grid users being connected to the grid with a dynamic injection and load profile and providing the redispatch service (after go live of iCAROS phase 2 – redispatch service provided by small assets and demand facilities) an automated tool supporting the decision to activate the correct remedial action for operational security reasons is becoming a prerequisite to maintain operation security in the future.

- In order to avoid sunk costs for society Elia judged that clarification regarding the CROSA remedial action optimizer was first needed given an alignment with operational security processes at ROSC level are a prerequisite. The assumption is that at the specifications of the CROSA optimizer will be stable enough in 2024 (Test runs will start in 2023 – go live foreseen of CROSA DA April 2025) to develop a local remedial action optimizer coherent with the CROSA optimizer that can be used for FAP – CORE processes and the national operational security processes.


2021
2022
2023
2024
2025
PREREQUISITE 1 : Development of local coordination and congestion management vision
Sep 1 - Dec 31
Development of local coordination and congestion management vision (internal design between international - national and local grid)
Jan 2 - Mar 31
Development of Belgian local coordination and congestion management vision (alignment with DSO)
Package 1 : Extension of CRI to local and DSO grid - prerequist 1 needs to be finalized
- Extension CRI local grid
Jan 2 - Mar 31
design of aggregation of national & local grid risk indicator
Apr 1 - Sep 30
IT implementation - no impact for service providers
Extension CRI DSO grid
Jan 2 - Mar 31
design of aggregation of congestion risk indicators and consequence on TSO-DSO flexibility
Apr 1 - Sep 30
design of common TSO-DSO platform needs to be discussed
common TSO-DSO IT development (6 months) - no IT implementation for service providers
Oct 1 - Mar 31
Package 2 : Local Remedial Action optimizer
PREREQUISITE : input regarding the functionalities of the optimizer used for CORE - ROSC is needed (View is supposed to be available after go live step 1 DA - April 2024)
Apr 30
Design local remedial action optimizer (8 months not considering 2 months of holidays)
May 1 - Dec 31
IT development (9 months) - no IT implementation for service providers
Jan 1 - Sep 30

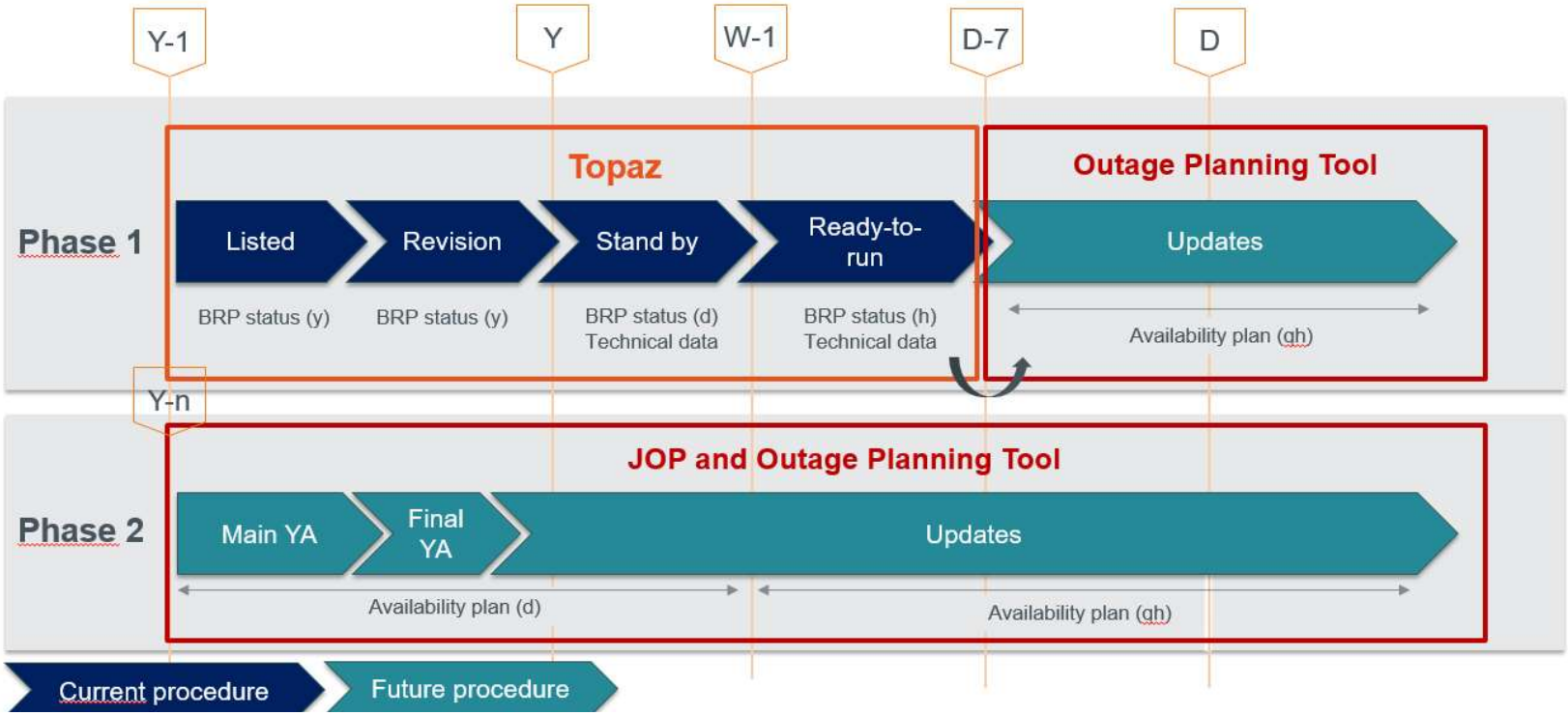
Group B : packages linked to full design OPA

Packages linked to full design OPA

- Package 3 : Full design availability plan for ≥ 25 MW production units all timeframes and adding new features (status reservation & exchange of testing information)
- Prerequisite 2 : <25 MW and ≥ 1 MW production units + demand facilities :
  Structural data and appointment of OPA/SA included in connection agreement & automatisation of the linked data flows
- Package 4 : Enduring solution for the split of roles OPA and BRP
- Package 5 : Extension of Design availability plan for <25 MW and ≥ 1 MW production units + demand facilities

Package 3 : Full design availability plan for ≥ 25 MW production units – all timeframes & features

- As agreed with market parties, iCAROS phase 1 focused on all developments needed to split the mFRR product (ID timeframe) SA product (DA & ID timeframe). Given that the same procedures were not only used for mFRR and SA but also OPA, the necessary adaptations were also made for splitting the data exchanges between SA and OPA so that these roles can be taken up by different parties in the long term enduring solution. As such only the operational procedures and exchanges from D-7 were reviewed. The following step is also to review the remaining existing procedures.



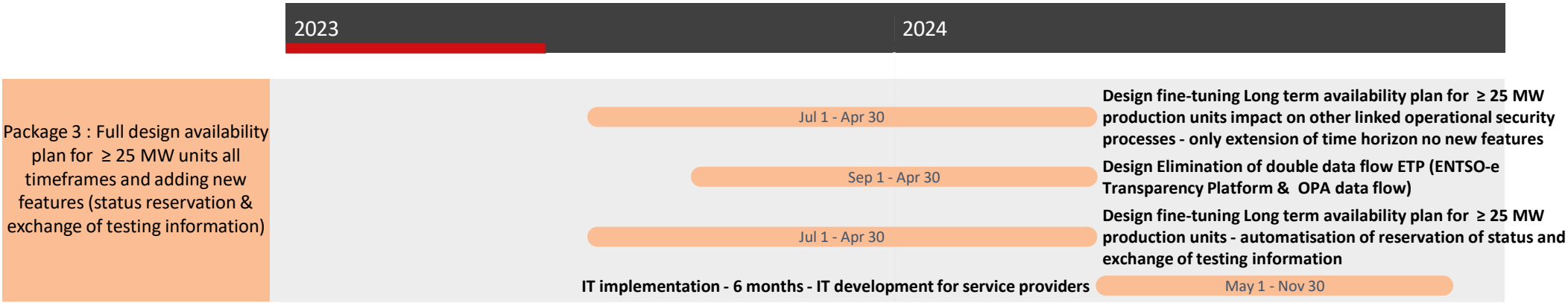
Topaz = existing IT tool – common data exchange of OPA/SA

Outage Planning Tool = new outage tool only dedicated to availability plans

JOP = Joint Outage Planning module to be developed together with DSOs

Package 3 : Full design availability plan for ≥ 25 MW production units all timeframes and adding new features (status reservation & exchange of testing information)

- Today market parties provided information regarding the availability of technical facilities/technical units of grid users towards the TSO for two different objectives (1) information for operational security analysis (information provided by the OPA) and (2) information required in the framework of COMMISSION REGULATION (EU) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council. The iCAROS design is fine-tuned in such way that after the implementation of package 3 the data exchange in the framework of the OPA contract covers both objectives and only the data exchange in the framework of the OPA contract need to be maintained by market parties and Elia.
- New automated more user friendly procedures foreseen for this timeframe (before D-7) in the iCAROS design but not in use today (exchange process regarding the reservation of a particular status or exchange of testing information).


2023
2024
Package 3 : Full design availability plan for ≥ 25 MW units all timeframes and adding new features (status reservation & exchange of testing information)
Jul 1 - Apr 30
Design fine-tuning Long term availability plan for ≥ 25 MW production units impact on other linked operational security processes - only extension of time horizon no new features
Sep 1 - Apr 30
Design Elimination of double data flow ETP (ENTSO-e Transparency Platform & OPA data flow)
Jul 1 - Apr 30
Design fine-tuning Long term availability plan for ≥ 25 MW production units - automatisation of reservation of status and exchange of testing information
IT implementation - 6 months - IT development for service providers
May 1 - Nov 30

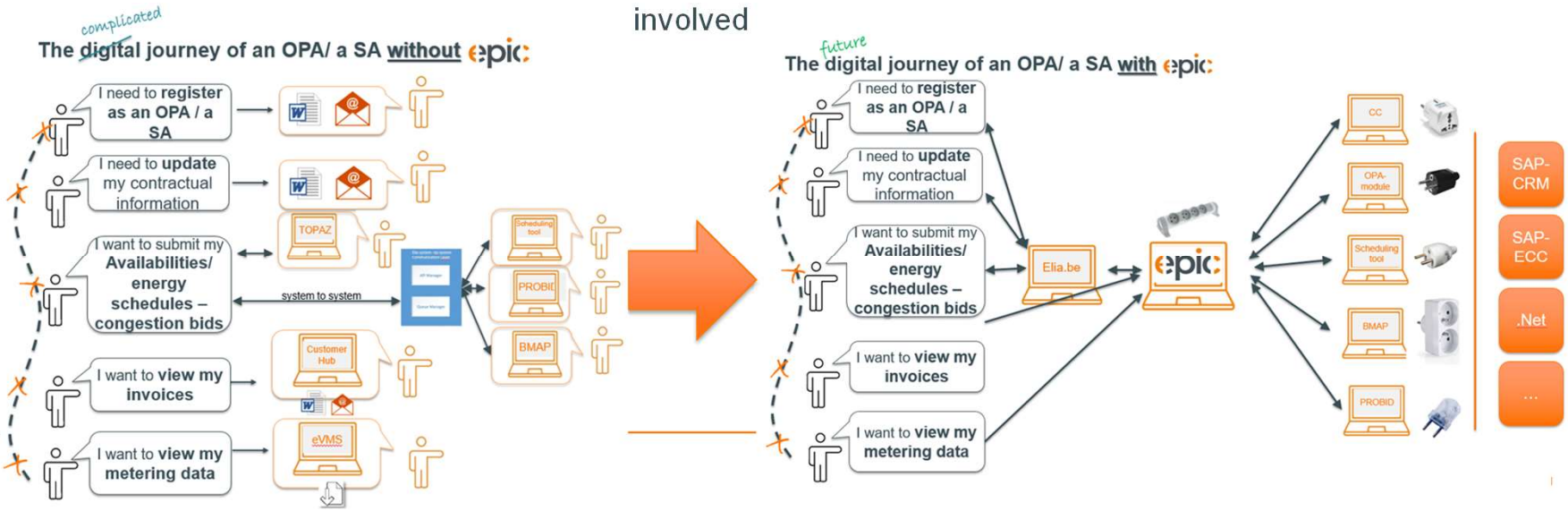
Prerequisite 2 :
<25 MW and ≥ 1 MW production units + demand facilities :
Structural data and appointment of OPA/SA included in connection agreement

- Structural data in connection agreement
  - SOGL defines the responsibilities of OPA and SA as follows :
    - SOGL art 3 (87) : 'outage planning agent' means an entity with the task of planning the availability status of a relevant power generating module, a relevant demand facility or a relevant grid element;
    - SOGL art 3 (90) : 'scheduling agent' means the entity or entities with the task of providing schedules from market participants to TSOs, or where applicable third parties;
  - Structural data regarding technical facilities needed for operation security analysis (active power) are out of scope of responsibilities of OPA or SA but today included in OPA/SA contract as intermediate solution. The LT enduring solution would be to be migrated all structural data to the connection agreement.
  - Of the total list of structural date mentioned by SOGL only the following information is needed for operational security analysis (active power)general data of the technical facility, including installed capacity and primary energy source;
- Appointment of OPA/SA
  - SOGL indicates that it is the Assets owners that should take up the task of OPA/SA
  - The asset owners of technical facilities are currently not identified in the connection contract
  - Options needs to be included in connection contract
    - to delegate the appointment of the SA and OPA from the grid user to the asset owner
    - To delegate the appointment of the SA and OPA from the CDSO to the CDSU (CDS-user),
    - To identify an 'asset owner in the lead' (similar to the existing concept of 'BRP in the lead') in the case the technical facility belongs to different owners

Prerequisite 2 :
<25 MW and ≥ 1 MW production units + demand facilities :
Automatisation of the contractual data flows (including updates)

- The number of market parties involved will exponentially increase when extending the scope of iCAROS from only ≥ 25 MW production units towards also <25 MW and ≥ 1 MW production units + demand facilities

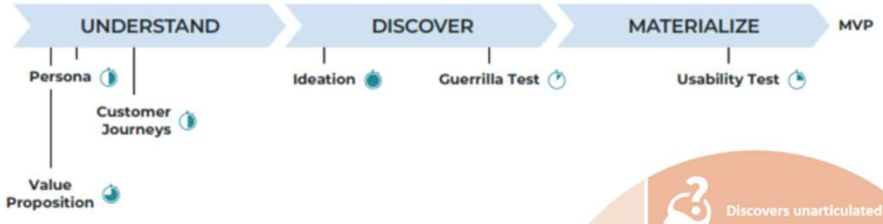
- Automatisation of contractual data flows in a user-friendly way with easy single access point is a prerequisite for market parties and Elia in order to cope with the exponential increasing number of involved

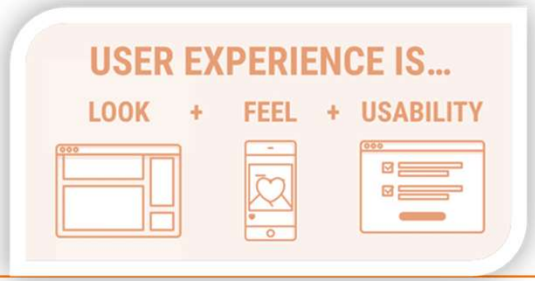


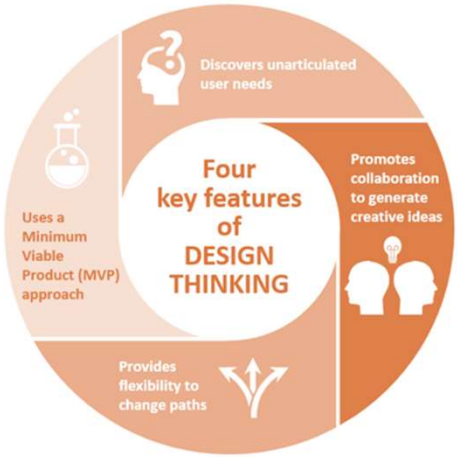
Prerequisite 2 :
<25 MW and ≥ 1 MW production units + demand facilities :
Automatisation of the contractual data flows (including updates)

- The automatisation of contractual data flows in a user-friendly way and easy single access will require the implementation of a new way of implementing design for this interaction is needed with a lot of market parties that today do not have an active relationship with Elia

Future main Consumer Centric Design implementation



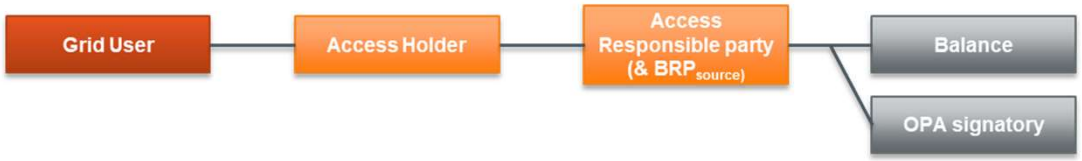




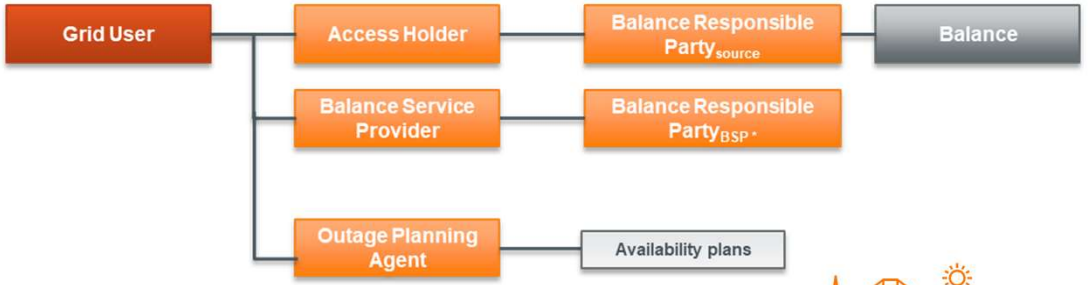
Package 4 : Enduring solution for the split of roles OPA and BRP

– The enduring solution for the split of roles of OPA and BRP was to develop a registry of existing units with SOGL obligations in the connection contract where the Grid user and the Asset Owner could, via a common declaration "delegate" the responsibility to appoint an OPA from the Grid User to the Asset Owner. As such as soon as prerequisite 2 (including the automatisation of contractual data flows) is fully developed the enduring solution for the split of roles of OPA and BRP can be implemented

From the intermediate solution ..

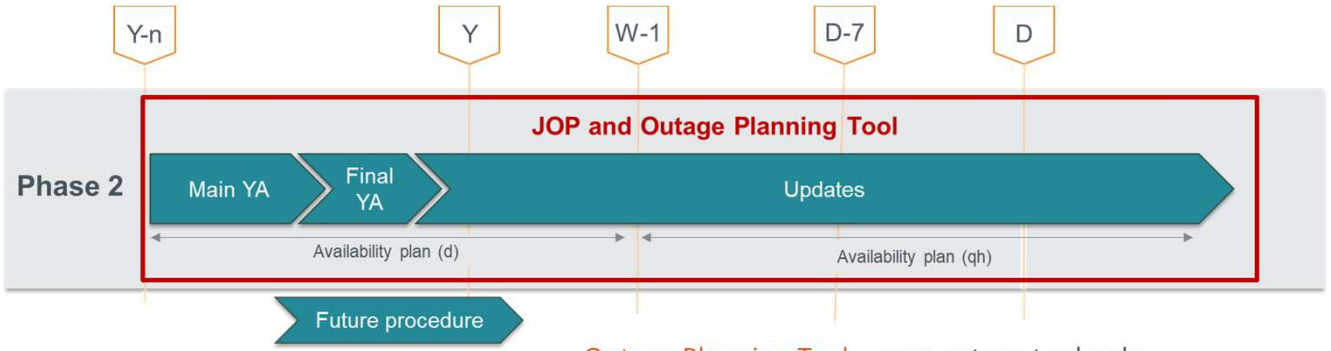


… towards the enduring solution

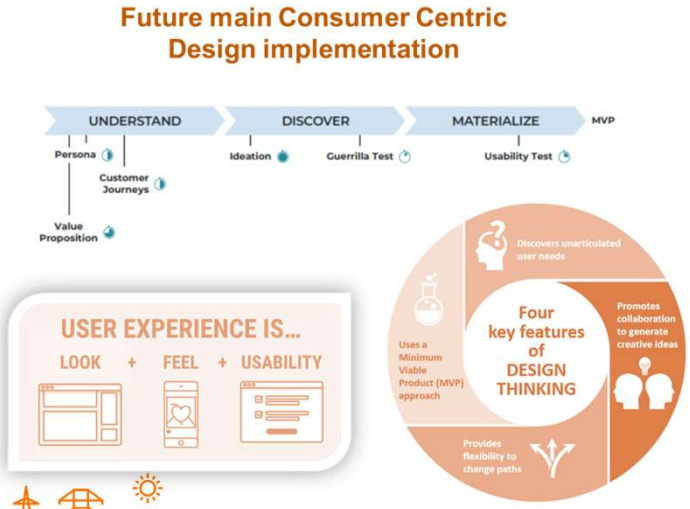


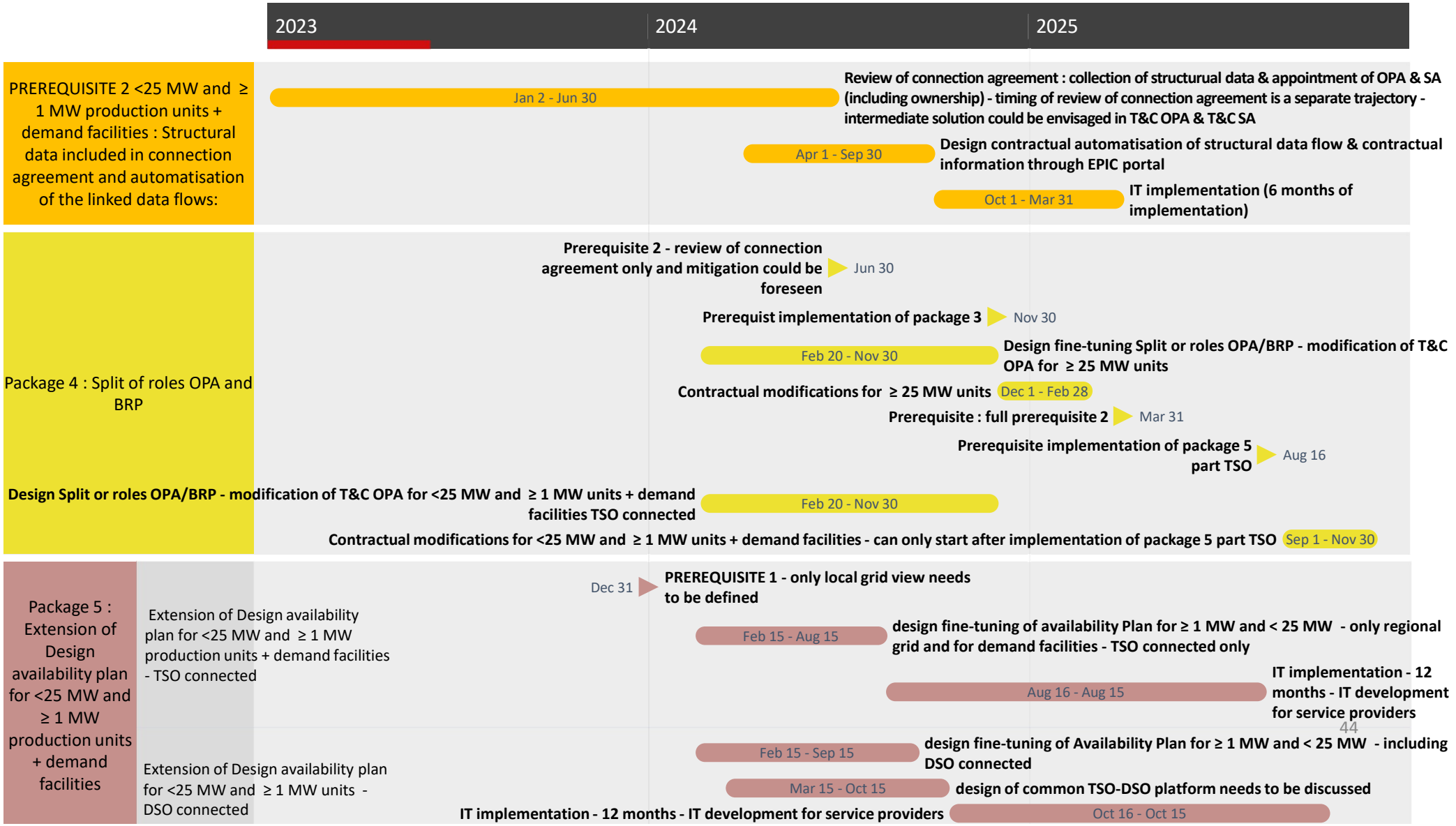
Package 5 : Extension of Design availability plan for <25 MW and ≥ 1 MW production units + demand facilities

- Impact of the review and fine-tuning of Belgian local governments and regulators vision regarding the coordination and congestion management on the design of availability plan for <25 MW and ≥ 1 MW production units + demand facilities
- The timing, granularity, means of exchange for all data exchanges procedures required from an OPA needs to be discussed in a consumer centric design implementation with new market players not used to take up this role nor aware of the importance of this task and aligned with DSOs. Information is preprocessed as much as possible for these new OPAs so that their tasks are limited to validation and notification of abnormalities.



Outage Planning Tool = new outage tool only dedicated to availability plans
JOP = Joint Outage Planning module to be developed together with DSOs




2023
2024
2025
PREREQUISITE 2 <25 MW and ≥ 1 MW production units + demand facilities : Structural data included in connection agreement and automatisation of the linked data flows:
Jan 2 - Jun 30
Review of connection agreement : collection of structurual data & appointment of OPA & SA (including ownership) - timing of review of connection agreement is a separate trajectory - intermediate solution could be envisaged in T&C OPA & T&C SA
Apr 1 - Sep 30
Design contractual automatisation of structural data flow & contractual information through EPIC portal
Oct 1 - Mar 31
IT implementation (6 months of implementation)
Package 4 : Split of roles OPA and BRP
Prerequisite 2 - review of connection agreement only and mitigation could be foreseen
Jun 30
Prerequist implementation of package 3
Nov 30
Feb 20 - Nov 30
Design fine-tuning Split or roles OPA/BRP - modification of T&C OPA for ≥ 25 MW units
Contractual modifications for ≥ 25 MW units
Dec 1 - Feb 28
Prerequisite : full prerequisite 2
Mar 31
Prerequisite implementation of package 5 part TSO
Aug 16
Design Split or roles OPA/BRP - modification of T&C OPA for <25 MW and ≥ 1 MW units + demand facilities TSO connected
Feb 20 - Nov 30
Contractual modifications for <25 MW and ≥ 1 MW units + demand facilities - can only start after implementation of package 5 part TSO
Sep 1 - Nov 30
Package 5 : Extension of Design availability plan for <25 MW and ≥ 1 MW production units + demand facilities
Extension of Design availability plan for <25 MW and ≥ 1 MW production units + demand facilities - TSO connected
Dec 31
PREREQUISITE 1 - only local grid view needs to be defined
Feb 15 - Aug 15
design fine-tuning of availability Plan for ≥ 1 MW and < 25 MW - only regional grid and for demand facilities - TSO connected only
Aug 16 - Aug 15
IT implementation - 12 months - IT development for service providers
Extension of Design availability plan for <25 MW and ≥ 1 MW units - DSO connected
Feb 15 - Sep 15
design fine-tuning of Availability Plan for ≥ 1 MW and < 25 MW - including DSO connected
Mar 15 - Oct 15
design of common TSO-DSO platform needs to be discussed
IT implementation - 12 months - IT development for service providers
Oct 16 - Oct 15

Group C : packages linked to Full design SA (including redispatching)

Packages Full design SA (including redispatching)

- Prerequisite 2
- Prerequisite 3 : perform the necessary amendments to the nomination process and the BRP Contract to enable the Grid User (GU) to take up the role of SA
- Prerequisite 4 : Modification of legal framework national as well as local in order to allow the transfer of the schedule obligation for demand facilities connected to Elia Grid towards SA.
- Package 6 : Enduring solution for split of roles SA and BRP
- Package 7 : Extension of design scheduling & redispatching towards ≥ 1 MW and < 25 MW production units and for demand facilities connected to Elia grid

Prerequisites for package 6: Enduring solution for the split of roles SA and BRP

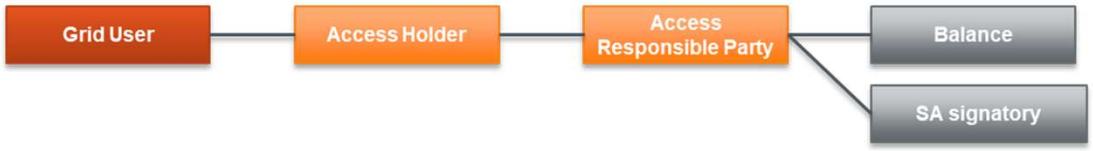
- Prerequisite 2 (see slide 27 -29)
- Prerequisite 3 : implementation of step 1 of the study on the evolution of the BRP Nominations : perform the necessary amendments to the nomination process and the BRP Contract to enable the GU to take up the role of SA or appoint a third party different from its BRP to take up this role. In this step, the Offtake and Injection Nominations remain on the level of the Access Point / distribution system. This implementation will be out of scope of iCAROS phase 2.
- Prerequisite 4 = Modification of legal framework national as well as local in order to allow the transfer of the schedule obligation for demand facilities connected to Elia Grid towards SA. Today the responsibility for providing information on the expected offtake of individual demand facilities is the role of the BRP. The realization of prerequisite 3 and the modification of the exemption given to demand facilities in the Code of Conduct as well as the Regional Grid Codes as foreseen in SOGL will allow to transfer the role from the BRP to the SA (i.e., the information is to be provided by the SA in the form of MW Schedules instead of by the BRP in the form of Offtake Nominations per Access Point in line with the European regulatory framework).

Package 6: Enduring solution for the split of roles SA and BRP

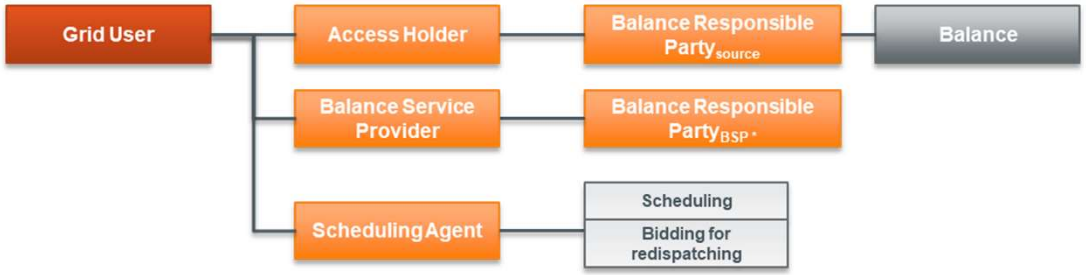
- The enduring solution for the split of roles of SA and BRP can be implemented as soon as all issues that prevent a full split are resolved. The following issues need to be tackled
  - Designation of the OPA/SA by the Grid User/Asset owner : this will be resolved as soon as prerequisite 2 is realized
  - Avoiding big bang for market parties : this will be resolved as soon as prerequisite 2 is realized
  - Impact on the BRP perimeter correction in case of redispatching activation => The recommendations that will come out of a study that will take place in 2023 at the request of the CREG related to the correction of BRP perimeter with Requested Energy vs Supplied Energy will need to be assessed as the impact of flexibility solutions offered in the framework of other designs - the implementation of EoEB (Exchange of Energy Blocks).
  - Provision of Daily Balancing Schedules (BRP) and generation schedules (SA) – including the transfer of the obligation to provide demand facility schedules to (SA) for this a review of T&C BRP and CDC and regional grid codes is needed. The solving of this issue needs to consider the recommendations of the study on the evolution of the BRP Nominations

Package 6 : Enduring solution for the split of roles SA and BRP

From the intermediate solution ..

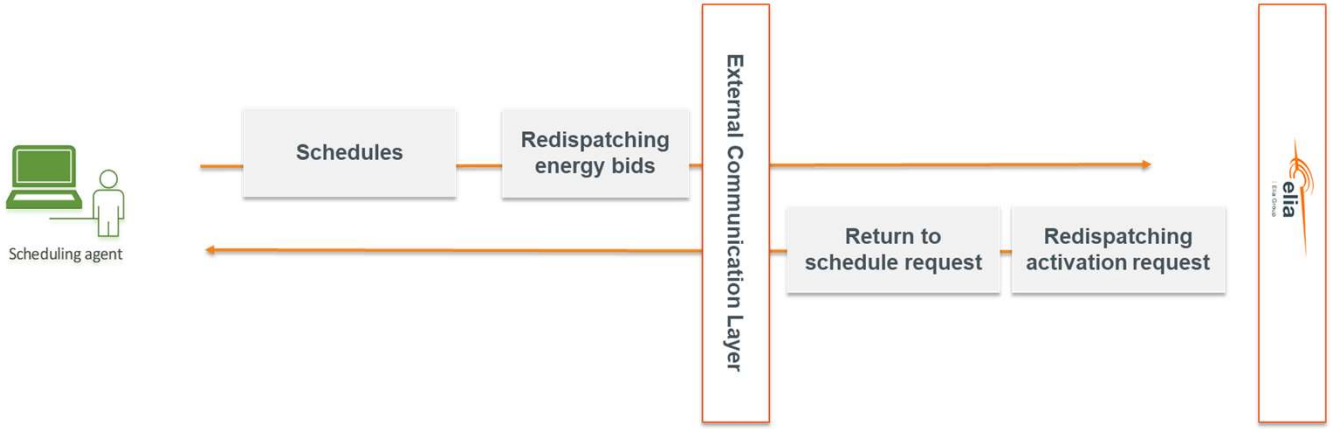


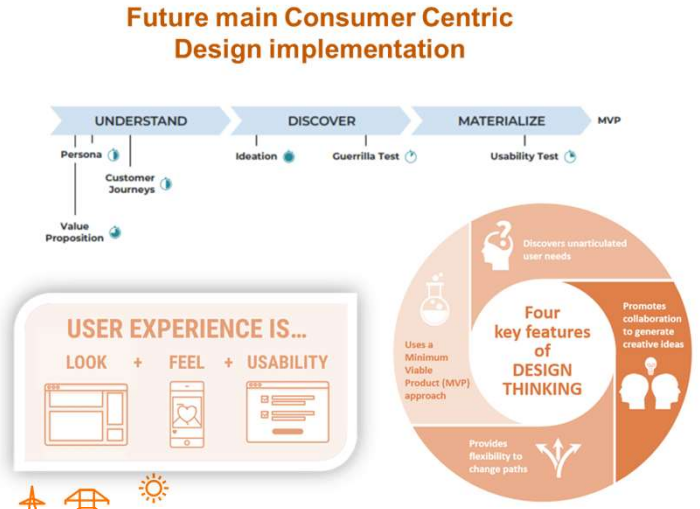
… towards the enduring solution



Package 7 : Extension of Design
Extension of design scheduling & redispatching towards ≥ 1 MW and < 25 MW units and demand facilities connected to Elia grid

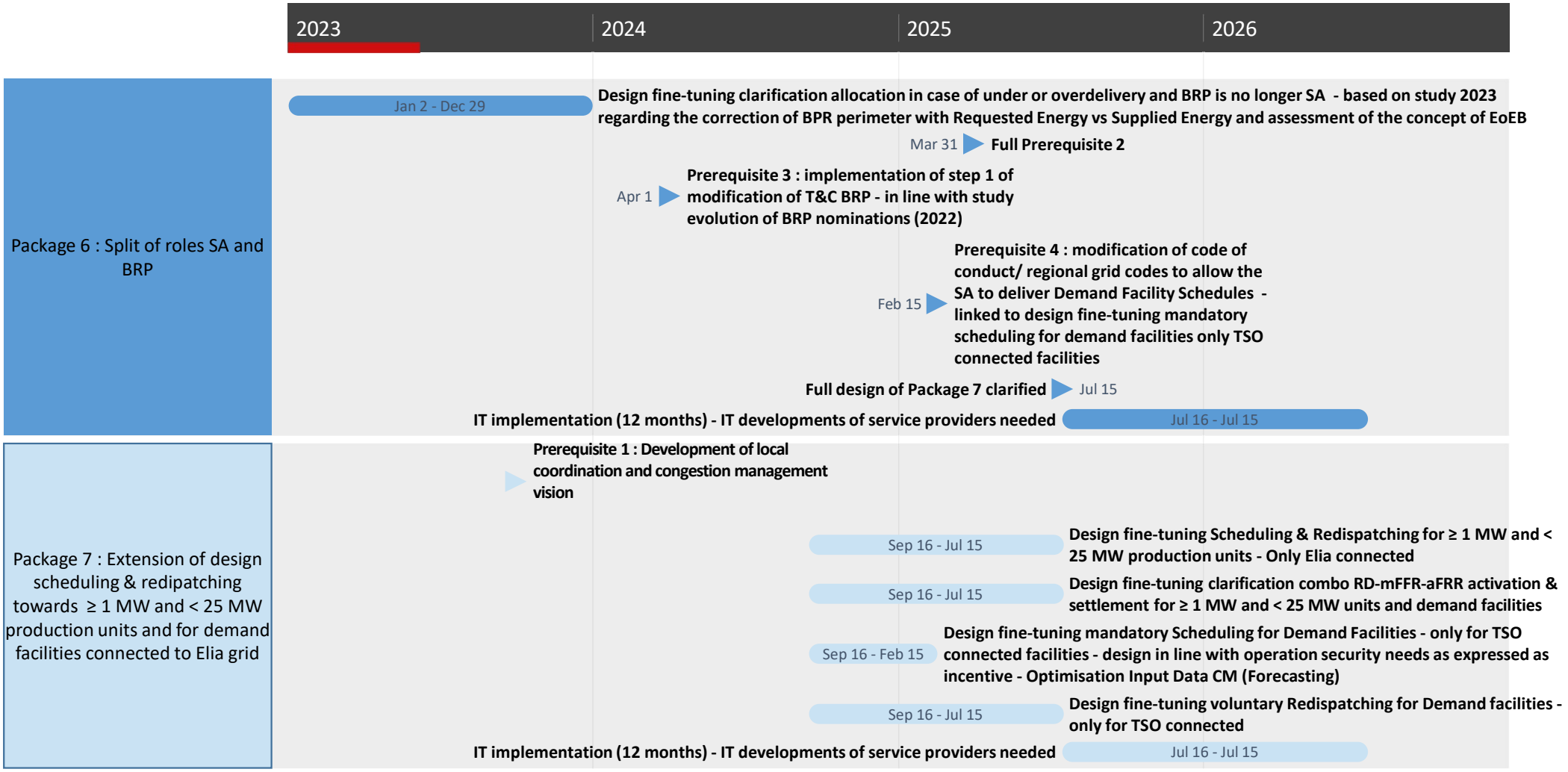
- The timing, granularity, means of exchange for all data exchanges procedures required from an SA needs to be discussed in a consumer centric design implementation with new market players not used to take up this role nor aware of the importance of this task and aligned with DSOs. Information is preprocessed as much as possible for these new SAs so that their tasks are limited to validation and notification of abnormalities.
- Impact of the review and fine-tuning of Belgian local governments and regulators vision regarding the coordination and congestion management on the design of schedules and redispatch energy bids for <25 MW and ≥ 1 MW production units + demand facilities





Package 7 : Extension of Design
Extension of design scheduling & redispatching towards ≥ 1 MW and < 25 MW units and demand facilities connected to Elia grid

- Impact of the development of local coordination and congestion management vision (prerequisite 1) on the design of schedules and redispatch energy bids for <25 MW and ≥ 1 MW units + demand facilities. In this framework it will be assessed if portfolio bidding will be allowed for ≥ 1 MW and < 25 MW production units and what are the conditions for such portfolio bids.
- The combo design (simultaneous activation of balancing product and congestion management) needs to be reassessed. This combo design will be different for ≥ 25 MW units (DPSUs) than for ≥ 1 MW and < 25 MW production units (DPPGs) as the later are typically offered in portfolio based.
- When the design is developed a final assessment is needed to ensure that the design of redispatch energy bids for <25 MW and ≥ 1 MW units and demand facilities is in line with the technical functionalities foreseen in the framework of the Congestion management vision of the European CORE region, namely the Core Regional Operational Security Coordination (ROSC) developed in line with Commission Regulations (EU) 2015/1222 (CACM) and 2017/1485 (SOGL).


2023
2024
2025
2026
Package 6 : Split of roles SA and BRP
Jan 2 - Dec 29
Design fine-tuning clarification allocation in case of under or overdelivery and BRP is no longer SA - based on study 2023 regarding the correction of BPR perimeter with Requested Energy vs Supplied Energy and assessment of the concept of EoEB
Mar 31
Full Prerequisite 2
Apr 1
Prerequisite 3 : implementation of step 1 of modification of T&C BRP - in line with study evolution of BRP nominations (2022)
Feb 15
Prerequisite 4 : modification of code of conduct/ regional grid codes to allow the SA to deliver Demand Facility Schedules - linked to design fine-tuning mandatory scheduling for demand facilities only TSO connected facilities
Full design of Package 7 clarified
Jul 15
IT implementation (12 months) - IT developments of service providers needed
Jul 16 - Jul 15
Package 7 : Extension of design scheduling & redipatching towards ≥ 1 MW and < 25 MW production units and for demand facilities connected to Elia grid
Prerequisite 1 : Development of local coordination and congestion management vision
Sep 16 - Jul 15
Design fine-tuning Scheduling & Redispatching for ≥ 1 MW and < 25 MW production units - Only Elia connected
Sep 16 - Jul 15
Design fine-tuning clarification combo RD-mFFR-aFRR activation & settlement for ≥ 1 MW and < 25 MW units and demand facilities
Sep 16 - Feb 15
Design fine-tuning mandatory Scheduling for Demand Facilities - only for TSO connected facilities - design in line with operation security needs as expressed as incentive - Optimisation Input Data CM (Forecasting)
Sep 16 - Jul 15
Design fine-tuning voluntary Redispatching for Demand facilities - only for TSO connected
IT implementation (12 months) - IT developments of service providers needed
Jul 16 - Jul 15