

Readiness of the Business testing protocol with Service Providers

The following document gives an overview of the different steps of testing that Elia would like to set up with the Service Providers in order to assess:

- 1) the **ability** of market parties **to understand and acknowledge** any Elia requests.
- 2) the **Business** readiness of the global system (Service Providers and Elia) to go-live, and
- 3) the alignment of the data exchange with **the reality** (performance, correct view on the market bid proposal...

The following sections give the steps to organize together with Service Providers with an increasing complexity.

Overview of the tests & required documents

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Tests	Type	What	Who	When			
				Day I	Day II		
iCAROS	iCAROS_1	Reproduction of real situation	Update of an Availability Plan	OPA	23/05/2023		
					Day II	25/05/2023	
					Backup	26/09/2023	
	iCAROS_2		Initialization of Schedules & RD Energy Bids	SA OPA	Day I	10/10/2023	
					Day II	11/10/2023	
					Backup	16/10/2023	
iCAROS_3		Updates of Schedules & RD Energy Bids	SA OPA	Day I	17/10/2023		
					Day II	18/10/2023	
					Backup	23/10/2023	
iCAROS_4	Simulation of scenario's	Activations of RD, Return to Schedules Requests	SA	Day I	24/10/2023		
					Day II	25/10/2023	
					Day II	26/10/2023	
					Backup	06/11/2023	
Back-up week 30/10 - 03/11/2023							
MARI	MARI_1	Reproduction of real situation	Initialization & updates of mFRR Energy Bids	BSP	Day I	07/11/2023	
					Day II	08/11/2023	
					Backup	13/11/2023	
MARI_2	Simulation of scenario's	Activations of mFRR	BSP	Day I	14/11/2023		
					Day II	15/11/2023	
					Day II	16/11/2023	
					Backup	20/11/2023	
Back-up week 20/11 - 24/11/2023							
iCAROS/MARI	iCAROS/MARI_1	Reproduction of real situation	Initialization of Schedules & RD/mFRR Energy Bids	BSP SA OPA	Day I	28/11/2023	
					Day II	29/11/2023	
						Backup	04/12/2023
iCAROS/MARI_2		Updates of Schedules & RD/mFRR Energy Bids	BSP SA OPA	Day I	05/12/2023		
					Day II	06/12/2023	
					Backup	11/12/2023	
iCAROS/MARI_3	Simulation of scenario's	Combination of activations of mFRR, RD & Return-to-Schedules Requests	BSP SA	Day I	12/12/2023		
					Day II	13/12/2023	
					Day II	14/12/2023	
					Backup	18/12/2023	

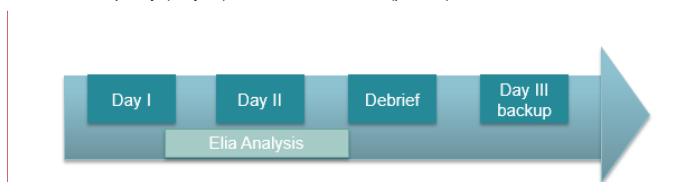
Before execution of the tests, each test requires the OPA/SA/BSP to fill in the adequate template:

Tests	When	Preparation	To send to Elia By
iCAROS_1	Day I	23/05/2023	
	Day II	25/05/2023	
	Backup	26/09/2023	
iCAROS_2	Day I	10/10/2023	05/10/2023
	Day II	11/10/2023	06/10/2023
	Backup	16/10/2023	11/10/2023
iCAROS_3	Day I	17/10/2023	12/10/2023
	Day II	18/10/2023	13/10/2023
	Backup	23/10/2023	18/10/2023
iCAROS_4	Day I	24/10/2023	17/10/2023
	Day II	25/10/2023	18/10/2023
	Day II	26/10/2023	19/10/2023
	Backup	06/11/2023	30/10/2023
MARI_1	Day I	07/11/2023	02/11/2023
	Day II	08/11/2023	03/11/2023
	Backup	13/11/2023	08/11/2023
MARI_2	Day I	14/11/2023	07/11/2023
	Day II	15/11/2023	08/11/2023
	Day II	16/11/2023	09/11/2023
	Backup	20/11/2023	13/11/2023
iCAROS/MARI_1	Day I	28/11/2023	23/11/2023
	Day II	29/11/2023	24/11/2023
	Backup	04/12/2023	29/11/2023
iCAROS/MARI_2	Day I	05/12/2023	30/11/2023
	Day II	06/12/2023	01/12/2023
	Backup	11/12/2023	06/12/2023
iCAROS/MARI_3	Day I	12/12/2023	05/12/2023
	Day II	13/12/2023	06/12/2023
	Day II	14/12/2023	07/12/2023
	Backup	18/12/2023	11/12/2023

General organization

Reproduction of real situation

- 2 common sessions on different days (Day I) and Day II) are planned: OPA/SA/BSP indicate upfront in which of the two sessions they participate and fill in the adequate template.
- No bilateral sessions are foreseen for this type of tests
- After the session, Elia analyzes the data received during the test.
- Communication of the results during a bilateral debriefing (e-mail or call)
- If needed, a backup day (Day III) is foreseen to redo (part of) the test.



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Simulation of scenario's – activations

- Bilateral sessions between SA/BSP & Elia via Teams are planned in 3 different days (Days I, II & III). SA/BSP participates in one session.
- Results of the test will be communicated during the call
- If needed, a backup day (Day backup) is foreseen.



Readiness of the Business testing protocol with OPA

Prerequisites for OPA

- Finalization individual IT tests for Availability Plans with External Communication Layer:
 - Unavailability event sent to the DEMO environment

Detailed Planning

OPA participates in one session and may choose between Day 1 or Day 2:

Day 1: Tuesday 23rd of May (= day D-1) (for Business Day of Wednesday 24th of May (= day D))

Day 2: Thursday 25th of May (= day D-1) (for Business Day of Friday 26th of May (= day D))

Back-up day: Tuesday 26th of September (= day D-1) (for Business Day of Wednesday 27nd of September (= day D))

Testing program

iCAROS_1 - Update of Availability Plans - *Reproduction of real situation*

Goal	How	Reference values	Acceptance criteria's:
Verify the consistency of availability plan	OPA sends update of Availability Plan for day D in DEMO	Availability plans for day D in PROD (Topaz)	< 10% error of #'s status

Detailed program

- In W-1 on Thursday, Elia will automatic translate of the availability status from Ready-to-Run process in Topaz PROD to the availability plan in Optiflex DEMO.
- Before 15:00 day D-1: OPA send the nomination files including the availability status of the all the DPs in their portfolio to Topaz for business day D
- Before 23:59 test day D-1: OPA send the Availability plan in Optiflex DEMO.

Examples

- **Situation 1:** DPs have a same status for the whole day

Topaz status (PROD)		
CCGT B GT1	Status	AV
Wind Park A	Status	PU
Batteries C	Status	FO

Availability plan in Optiflex (DEMO)		00:00	00:15	...	23:45
CCGT B GT1	Status	A	A	...	A
	<i>P_{max, avail}</i>	85	85	...	85
Wind Park A	Status	U	U	...	U
	<i>P_{max, avail}</i>	0	0	...	0
Batteries C	Status	FO	FO	...	FO
	<i>P_{max, avail}</i>	0	0	...	0

- **Situation 2:** DPs have a different status for the whole day. As the granularity is different in Topaz (daily) and Optiflex (QH), the DP status should follow the rule:
 - AV status in Topaz may correspond to the status A only
 - PU status in Topaz may correspond to the status A & U
 - FO status in Topaz may correspond to the status A & U & FO

Topaz status (PROD)		
CCGT B GT1	Status	PU
Wind Park A	Status	PU
Batteries C	Status	FO

Availability plan in Optiflex (DEMO)		00:00	00:15	...	23:45
CCGT B GT1	Status	A	A	...	U
	<i>P_{max, avail}</i>	85	85	...	0
Wind Park A	Status	U	U	...	A
	<i>P_{max, avail}</i>	0	0	...	85
Batteries C	Status	FO	U	...	A
	<i>P_{max, avail}</i>	0	0	...	85

Acceptance criteria's

OPA should reach less than 10% of errors for the whole portfolio to pass this test. One error is recorded when there is a mismatch in the status in one DP for one day.

Elia will communicate the results of the tests via e-mail including the need to replan the test during the back-up day.

Readiness of the Business testing protocol with OPA & SA

Testing program

iCAROS_2 - Initialization of Schedules & RD Energy Bids - *Reproduction of real situation*

Prerequisites for OPA

- Completeness of testing iCAROS_1 - Update of Availability Plans

Prerequisites for SA

- Finalization individual IT tests for Schedules:
 - Schedule of a DP sent successfully to the DEMO environment.
 - RD Energy bids sent successfully to the DEMO environment
- Fill in the template "TestingProtocol_Annexe_iCAROS_2" with the DPs of the OPA/SA portfolio at least 3 business days before the test day.

Planning

OPA participates in one session and may choose between Day 1 or Day 2:

- **Day 1:** Tuesday 10th of October (= day D-1) (for Business Day of Wednesday 11th of October = day D)
- **Day 2:** Wednesday 11th of October (= day D-1) (for Business Day of Thursday 12th of October = day D)
- **Communication of the results of the tests:** via e-mail by Friday 13th October 12:00pm using the template "TestingProtocol_Annexe_iCAROS_2"
- **Back-up day:** Monday 16th of October (= day D-1) (for Business Day of Tuesday 17th of October = day D)

Commented [FM3]: Interne: organiser dry run de resultats avec consultants internes

Commented [MA4]: By when do we need this? Arnaud to manage?

Commented [MA5R4]: + what is in the template?

Commented [MA6]: What do we communicate?

Objectives	How	Reference values	Acceptance criteria's:
1) Verify the consistency of <u>Schedules</u>	SA sends Schedules for day D for full portfolio	Schedules for day D in PROD (Topaz)	i. <u>Per DP & per qh</u> : Failed if difference of values with a margin of more than 10% of Pmax,tech ii. <u>Per SA</u> : 90% of qh of all the DPs in the portfolio should be "Success".
2) Verify the consistency of RD <u>Energy bids</u>	SA sends RD Energy bids for day D for full portfolio	Implicit volume calculated by Elia	a) <u>by Technical Facility and per qh</u> , the largest available volume should be at least 80% of the reference value (volume of Non-Contracted bid). b) <u>By SA</u> : 90% of qh of all the Technical Facilities in the

Commented [MA7]: Why Pmax tech? not the schedule value?

			portfolio should be "Success".
3) Verify the consistency of <u>Availability Plan</u>	OPA sends update of Availability Plan for day D	Availability plans for day D in PROD (Topaz)	OPA should reach less than 10% of errors for the whole portfolio to pass this test. One error is recorded when there is a mismatch in the status in one DP for one day.

Detailed program

- In W-1 on Thursday, Elia will automatic translate of the availability status from Ready-to-Run process in Topaz PROD to the availability plan in Optiflex DEMO.
- Before 15:00 day D-1:
 - OPA send the nomination files including the availability status of the all the DPs in their portfolio to Topaz for business day D
 - SA send the nomination files including the schedules of all the DPs in their portfolio to Topaz for business day D
- Before 17:59 day D-1:
 - OPA send the update of their Availability plan for business day D in Optiflex DEMO if needed (if changes between Ready-to-Run and Nomination procedures)
 - SA send the schedules for business day D in Optiflex DEMO
 - SA send the RD Energy Bids for business day D in Biple DEMO

Examples

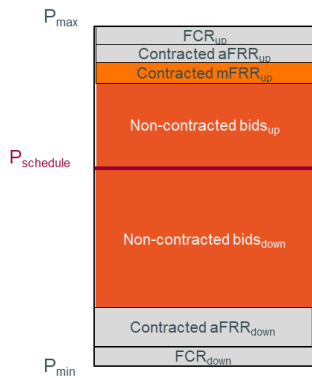
- Objective 1):** Verify the consistency of Schedules
 - Acceptance criteria per DP & per qh: The result of the concerned qh will be "Success" if $\frac{|Schedule\ PROD - Schedule\ DEMO|}{P_{max,tech}} > 10\%$
 - Acceptance criteria per SA: the results of the objective will be "Success" if $\frac{\#s\ qh\ with\ failure}{\#s\ qh\ with\ failure + \#s\ qh\ with\ success} < 10\%$,

Delivery Point	DP EAN	Technical Facility	Pmax,tech		00:00	00:15	00:30	00:45	01:00	
DP_A		TF_1	100	Schedule PROD	80	100		80	80	1
				Schedule DEMO	80	80		100	85	6
				Result per qh	Success	Failed	Failed	Success	Success	

Objective 1) Acceptance criteria for SA_1	$\frac{\#s\ qh\ with\ failure}{\#s\ qh\ with\ failure + \#s\ qh\ with\ success} = \frac{2}{96} < 10\% \rightarrow \text{Success}$
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- Objective 2) :** Verify the consistency of RD Energy bids

Implicit volume calculated by Elia by Technical Facility: The volume of Non-Contracted bid is the reference value by Technical Facility



Acceptance criteria:

- **by Technical Facility and per qh**, the largest available volume, taking into account Exclusive Groups, Conditional Links, Parent/Child relation..., should be at least 80% of the reference value (volume of Non-Contracted bid). The result of the concerned qh will be "Success" if $\frac{Volume\ PROD - Volume\ DEMO}{\max(Volume\ PROD; Volume\ DEMO)} > 20\%$
- **By SA**: the results of the objective will be "Success" if $\frac{\# 's\ qh\ with\ failure}{\# 's\ qh\ with\ failure + \# 's\ qh\ with\ success} < 10\%$,

Technical Facility	Delivery Point	DP EAN	Bid Group name	00:00	00:15	00:30	00:45	01:00	
TF_1	DP_A			Volume UP PROD	80	100	75	100	85
	DP_B			Volume UP DEMO	80	80	100	75	80
				Result UP per qh	Success	Success	Failed	Failed	Success
				Volume DOWN PROD	1	50	50	50	50
				Volume DOWN DEMO	50	1	50	50	50
				Result DOWN per qh	Failed	Failed	Success	Success	Success

Objective 2) Acceptance criteria for SA_1 $\frac{\# 's\ qh\ with\ failure}{\# 's\ qh\ with\ failure + \# 's\ qh\ with\ success} = \frac{4}{2+6} < 10\%$

- **Objective 3:** Verify the consistency of Availability Plan:
 - same as iCAROS_1

Delivery Point	DP EAN	Technical Facility	Pmax,tech	00:00	00:15	00:30	00:45	01:00	
DP_A		TF_1	100	Availability plan status in PROD	Available	Unavailable	FO	Testing	...
				Availability plan status in DEMO	Success	Failed	Failed	Failed	...
				Result per qh	Success	Failed	Failed	Failed	...
DP_B		TF_1	50	Availability plan status in PROD	Unavailable	Unavailable	
				Availability plan status in DEMO	Success	Success	
				Result per qh	Success	Success	

iCAROS_3 – Updates of Schedules & RD Energy Bids- Reproduction of real situation

Prerequisites for OPA

- Completeness of testing iCAROS_1 - Update of Availability Plans

Prerequisites for SA

- Completeness of testing iCAROS_2 - Initialization of Schedules & RD Energy Bids
- Fill in the template "TestingProtocol_Annexe_iCAROS_3" with the DPs of the OPA/SA portfolio at least 3 days before the test day

Commented [MA8]: Calculation is not clear, what is the 1 + 2 + 0?

Commented [FM9R8]: Formula added + typo

Commented [MA10]: By when do we need this? Arnard to manage?

Commented [MA11R10]: + what is in the template?

Planning

OPA & SA participate in one session and may choose between Day 1 or Day 2:

- **Day 1:** Tuesday 17th of October (= day D) (for Business Day of Tuesday 17th of October = day D)
- **Day 2:** Wednesday 18th of October (= day D) (for Business Day of Wednesday 18th of October = day D)
- **Communication of the results of the tests:** via e-mail by Friday 20th October 12:00pm using the template "TestingProtocol_Annexe_iCAROS_3"
- **Back-up day:** Monday 23th of October (= day D) (for Business Day of Monday 23th of October = day D)

Goal	How	Reference values	Acceptance criteria's:
Verify the consistency of <u>Schedules</u>	For each update in PROD, SA sends corresponding update in DEMO (Prodbid)	Schedules for day D in PROD (Prod)	a) <u>Per DP & per qh</u> : Failed if difference of values with a margin of more than 10% of $P_{max,tech}$ b) <u>Per SA</u> : 90% of qh of all the DPs in the portfolio should be "Success".
Verify the consistency of RD <u>Energy bids</u>	SA sends RD Energy bids for day D for full portfolio	Implicit volume calculated by Elia	a) <u>by Technical Facility and per qh</u> , the largest available volume should be at least 80% of the reference value (volume of Non-Contracted bid). b) <u>By SA</u> : 90% of qh of all the Technical Facilities in the portfolio should be "Success".
Verify the consistency of <u>Availability Plan</u>	OPA sends update of Availability Plan for day D	Availability plans for day D in PROD (Topaz)	OPA should reach less than 10% of errors for the whole portfolio to pass this test. One error is recorded when there is a mismatch in the status in one DP for one day.

Commented [MA12]: Why Pmax tech? not the schedule value?

Detailed program

- In W-1 on Thursday, Elia will automatic translate the availability status from Ready-to-Run process in Topaz PROD to the availability plan in Optiflex DEMO.
- Before 15:00 day D-1:
 - OPA send the nomination files including the availability status of all the DPs in their portfolio to Topaz for business day D
 - SA send the nomination files including the schedules of all the DPs in their portfolio to Topaz for business day D
- Before 17:59 day D-1:

- o OPA send the update of their Availability plan for business day D in Optiflex DEMO if needed (if changes between Ready-to-Run and Nomination procedures)
- o SA send the schedules and RD Energy bids for business day D in Optiflex DEMO & Biple DEMO
- On day D, for each update of schedules for day D in Probid PROD:
 - o SA send the updated schedules in Optiflex DEMO
 - o SA send the updated RD Energy bids in Biple DEMO

Commented [FM13]: Discuss with Quentin / Ruben how to deal with GCT

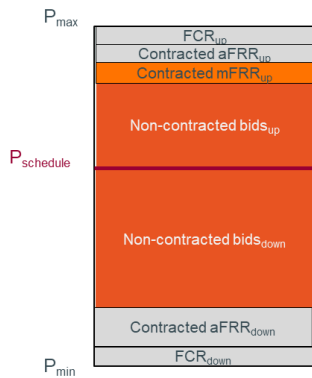
Examples

- **Objective 1):** Verify the consistency of Schedules
 - o **Acceptance criteria per DP & per qh & per version:** The result of the concerned qh will be "Success" if $\frac{|Schedule\ PROD - Schedule\ DEMO|}{P_{max,tech}} > 10\%$
 - o **Acceptance criteria per SA:** the results of the objective will be "Success" if $\frac{\#s\ qh\ with\ failure}{\#s\ qh\ with\ failure + \#s\ qh\ with\ success} < 10\%$,

Delivery Point	DP EAN	Technical Facility	Pmax.tech	Version		00:00	00:15	00:30	00:45
DP_A		TF_1	100	1	Schedule PROD	80	100	80	80
					Schedule DEMO	80	80	100	85
					Result per qh	Success	Failed	Failed	Success
DP_A		TF_1	100	2	Schedule PROD	1,2	100	100	100
					Schedule DEMO	48,3	100	100	100
					Result per qh	Failed	Success	Success	Success
DP_B		TF_1	50	1	Schedule PROD	52,1	54,1	56,1	58,1
					Schedule DEMO	48	50	52	54
					Result per qh	Success	Success	Success	Success

- **Objective 2) :** Verify the consistency of RD Energy bids

Implicit volume calculated by Elia by Technical Facility: The volume of Non-Contracted bid is the reference value by Technical Facility



Acceptance criteria:

- o **by Technical Facility and per qh & per version,** the largest available volume, taking into account Exclusive Groups, Conditional Links, Parent/Child relation..., should be at least 80% of

the reference value (volume of Non-Contracted bid). The result of the concerned qh will be "Success" if $\frac{|Volume_{PROD} - Volume_{DEMO}|}{\max(Volume_{PROD}; Volume_{DEMO})} > 20\%$

- o **By SA:** the results of the objective will be "Success" if $\frac{\# \text{'s qh with failure}}{\# \text{'s qh with failure} + \# \text{'s qh with success}} < 10\%$,

Technical Facility	Delivery Point	DP EAN	Bid group ID	Version		00:00	00:15	00:30
TF_1	DP_A			1	Volume UP PROD	80	100	80
	DP_B				Volume UP DEMO	80	80	100
					Result UP per qh	Success	Success	Success
					Volume DOWN PROD	1	50	50
					Volume DOWN DEMO	50	1	50
					Result DOWN per qh	Failed	Failed	Success
TF_1	DP_A			2	Volume UP PROD	80	100	80
	DP_B				Volume UP DEMO	80	80	100
					Result UP per qh	Success	Success	Success
					Volume DOWN PROD	1	50	50
					Volume DOWN DEMO	50	1	50
					Result DOWN per qh	Failed	Failed	Success

- **Objective 3:** Verify the consistency of Availability Plan: same as iCAROS_1

iCAROS_4 – Activations of RD, Return to Schedules Requests - Simulation of scenarios.

Prerequisites for SA

- Completeness of testing iCAROS_2 - Initialization of Schedules & RD Energy Bids
- Fill in the template "TestingProtocol_Annexe_iCAROS_4" with information on the scenario's and on the initial schedules and RD energy bids to use during the test at least one week before the test.

Planning

SA participates in one session Day 1, Day 2, Day 3:

- **Day 1:** Tuesday 24th of October (= day D)
- **Day 2:** Wednesday 25th of October (= day D)
- **Day 3:** Thursday 26th of October (= day D)
- **Back-up day:** Monday 6th of November (= day D)

SA should register to one session. As Elia cannot organize all these bilateral tests on the same day, please register to one session asap.

Communication of the results during the test via a bilateral call.

Objectives

Objectives	How	Reference values	Acceptance criteria's:
Test multiple (virtual) activations	Initialization: SA sends Schedules & RD Energy bids Test: Bilateral call during which Elia sends activations	Scheduled activation Direct activation Scheduled activation of RD Energy bid with extension of volume and duration A return to schedule request	- Technical and business acknowledgement - Confirmation during the call of the behavior requested

Detailed program

The list of RD energy bids activations will be further developed in bilateral with SA but should at least include:

- One Scheduled activation
- One Direct activation
- One Scheduled activation of RD Energy bid with extension of volume and duration
- A return to schedule request

SA and Elia will agree upfront on the properties of the RD energy bids and scenarios that will be activated during the test (see TestingProtocol_Annexe_iCAROS_4).

In D-1, SA should submit the schedules and RD Energy bids as communicated in the TestingProtocol_Annexe_iCAROS_4.

In D, during a bilateral call, Elia will send the upfront agreed activations. SA are expected to reply to those activations with the process described in the Technical Guide. Furthermore, SA should confirm during the test the behavior of the activated DP: setpoint, direction...