

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Remarks

This change control procedure focuses only on changes impacting on SDAC level. Existing local / regional change control procedures will remain in place. The SDAC level is added on to it.

Table of Contents

1. Introduction.....	4
2. RfC life cycle management flow-interaction between SDAC groups, PCR PMB IT, and PCR MSD-ALG 6	
1) Non-notifiable change (“Type I change”):.....	6
2) Fast-track change (“Type II change”):	7
3) Standard change (“Type III change”):.....	7
<i>a)</i> Standard change (“Type IIIa change”):	8
4) Research and Development change (“Type IV change”):	13
3. Procedure for Type III RfCs.....	14
4. Impact Allocation	20
5. Go-Live window concept, principles and go-Live windows mechanism establishment	21
6. Corrective measures - Algorithm performance management (AM Article 12).....	24
7. Monitoring Algorithm performance - Operations.....	26
Annex 1: Request for Change Form.....	28
Annex 2: NEMO-only RfC examples	32
Annex 3: Corrective measures application steps	33

1. Introduction

This document describes the Change Control Procedure to be used as part of the SDAC operations (and IDA operations in case it concerns the same MCO Function assets (Euphemia/PMB/Simulation Facility and associated operational procedures, see section 1.4)). This procedure must be used in order to request changes in SDAC in an efficient and controlled way with a minimal level of disruption, and with controlled risk.

The origin of the change determines the approval process of the change. Changes as a consequence of decisions of competent local authorities are finally approved by these authorities (before or during the change control process) and not by the SDAC MCSC.

In such case, the procedure below is developed to assess and validate if a change is possible from a technical and operational point of view.

In case the SDAC MCSC members cannot come to an agreement concerning the validation of the change request from a technical and operational point of view, the SDAC MCSC has to agree on what message shall be transferred to the competent authority.

1.1. Scopes and principles

The change control process aims at tracking any change which might affect SDAC MCO Function assets (i.e. “material for SDAC” see Chapter 8, Impact Allocation). The change can be requested by the following originators:

1. A party/parties part of the DAOA directly or by external parties involved with parties of the DAOA. In the latter case the change request will be filed through the party which is member of the DAOA.
2. A Local competent authority (this includes changes to features/elements of the price coupling or capacity allocation requirements, constraints or settings initially approved by all local competent authorities within SDAC).
3. European competent authorities (changes to be managed on a European level).

Every request for change (RfC) must be notified first to the SDAC OPSCOM Chair / PMO in order to be taken into account at SDAC level. SDAC OPSCOM will manage the request for change according to this Change Control Procedure.

Changes that are confirmed by SDAC OPSCOM (potentially with the help of SDAC MSD, see section 1.2) to have no/minor impact (“Type I” change, see Chapter 2) on DA & IDA MCO Function assets must be notified to the SDAC OPSCOM but do not need to go through the approval process.

For the registration and management of all change requests under SDAC, as well as for the management of the Roadmap, Go-Live windows (GLWs), etc., the SDAC Change Request Register will be used ([Link](#)). The SDAC Change Request Register will be used by all different SDAC Taskforces involved in any way in the change request process.

The SDAC OPSCOM can decide at any moment to call for a meeting or conference call requesting for additional information from the originator of the change request.

The implementation of the change request will be handled as a separate project and not as part of the change control procedure, except for changes related to the MCO assets (Euphemia/PMB).

1.2. Interaction between SDAC CCP, ANDOA CCP and PCR CCP

Once notified about an RfC which originated either on a SDAC level or on a local/regional level, the SDAC OPSCOM will be responsible for maintaining an overall global test and implementation planning of all the different changes. It is then the responsibility of the SDAC OPSCOM to allocate a test time slot and an implementation timeslot for each RfC.

SDAC OPSCOM PMO forwards all RfCs towards SDAC MSD (except Type I RfCs) and in case SDAC OPSCOM has identified a potential impact on DA MCO Function assets SDAC MSD will further analyse such impact.

In order to ensure technical preparations and implementations (e.g. installation procedures which have to be aligned with the service providers) the RfC will be provided by SDAC OPSCOM to ANDOA CCP where these aspects are detailed. However, the reference CCP for all parties is this SDAC CCP document.

SDAC OPSCOM will mediate between the relevant parties in case that several changes are scheduled for testing and implementation during the same time slot. If no solution can be found in the SDAC OPSCOM, then the issue will be escalated to SDAC MCSC.

1.3. Cost sharing principles

The SDAC MCSC shall agree on the costs for doing an impact assessment, the costs for implementing the change and the sharing of those costs. Unless decided otherwise by the SDAC MCSC the following principles to be applied for only the common costs related to assessment, analysis, development on SDAC/SIDC level or requested by SDAC/SIDC TFs:

- Changes concerning DA only: Joint SDAC costs for establishing & amending
- Changes concerning IDA only: Joint SIDC costs for establishing & amending
- Changes concerning both DA & IDA (e.g. changes related to 15Min MTU): Equal sharing between Joint SDAC & Joint SIDC costs for establishing & amending

Details are described in Annex 6 “Cost sharing, monitoring and settlement” to the DAOA.

Details for the cost sharing for SIDC IDA can be found in IDOA annexes: [Link](#)

The costs for implementing changes on the DA MCO Function assets are joint TSO/NEMO costs. The definition of the scope and the cost validation of such kind of RfCs (Type IIIb) is handled within SDAC MSD.

It must be noted that the local & regional development costs for each RfC are to be paid by the respective local and/or regional parties.

1.4. List of DA MCO Function assets

- SDAC common system (PMB).
- All SDAC common Procedures.
- SDAC common algorithm (Euphemia).
- All SDAC common contracts.
- SDAC Simulation Facility.

2. RfC life cycle management flow-interaction between SDAC groups, PCR PMB IT, and PCR MSD-ALG

The natural flow every new RfC will have between the different SDAC Taskforces (SDAC OPSCOM, SDAC MSD) and also PCR MSD-ALG/PCR MSD PMB IT from the notification to the Go-Live is contemplated in the following high-level flow charts depending on the categorization of the RfC. Also the expected impact of the requested change on the SDAC algorithm performance and on market participants will influence the process.

The following assumptions are considered for the simplification of the flow charts:

- Only positive branches are included in the flow for the simplification in the overview.
- Timings are not taken into account.
- Several steps are not included (e.g. Roadmap process interaction, Go-Live window prioritization).

With regards to the principles governing the change request management, the applicable ones are detailed either in this document or in the NEMO Algorithm Methodology (or 'AM') (Annex I specifically); AM sets forth transparent rules and principles for the management (submission, evaluation, decision, and implementation) of requests for changes related to the SDAC algorithm. The present document takes into account all the information contained in the AM with regards to SDAC algorithm and change request management and if needed, further describes the processes on a more practical manner, based on experience, after common agreement by SDAC and ANDOA&PCR taskforces.

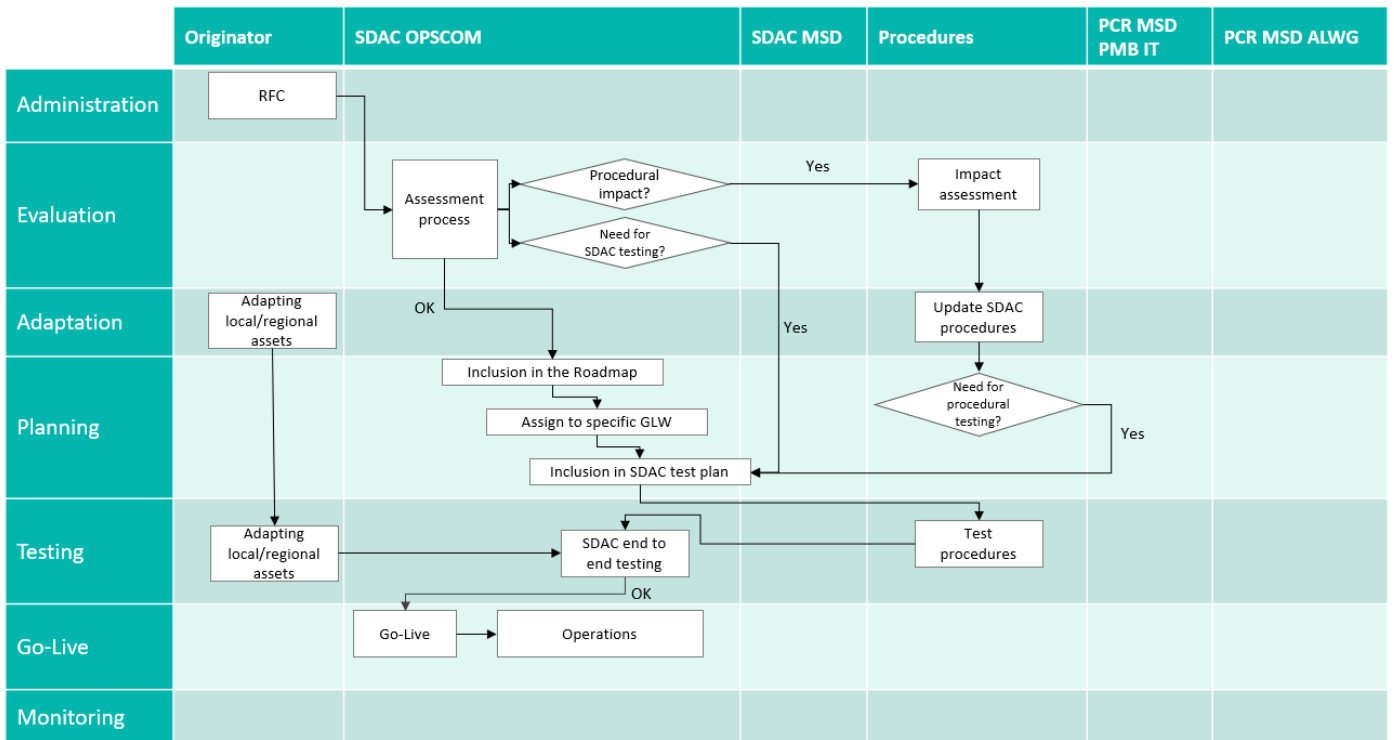
Based on the Algorithm methodology (Article 14), the following types of changes are distinguished in this CCP:

1. Non-notifiable change ("Type I change")
2. Fast-track change ("Type II change")
3. Standard change ("Type III change")
 - a. Topological change ("Type IIIa change")
 - b. Functionality change ("Type IIIb change")
 - c. Euphemia/PMB release update ("Type IIIb change")
4. R&D change ("Type IV change")

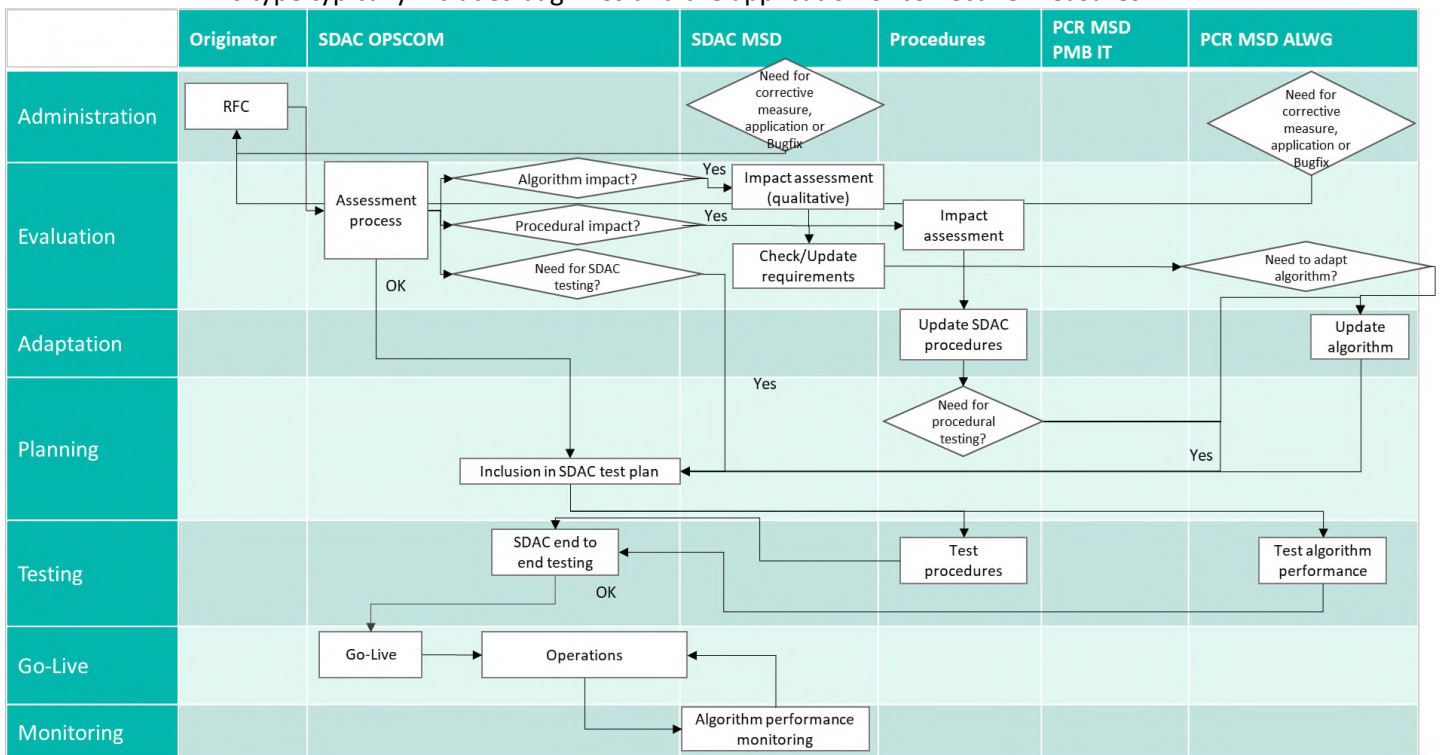
RfCs that might impact Simulation Facility:

- New Euphemia version (e.g. Euphemia 10.6)
- New hardware or software recommendation or constraint (e.g. Oracle 19).
- New "static" configurations including:
 - Topology (e.g. a new area or line, new ID or name of existing area or line, new precision in an existing area)
 - Algorithm parameters (e.g. a change from 12min time limit to 17 min time limit)
 - Algorithm configuration files.
 - New usage of "inactive" Euphemia functionality.
 - There might be Euphemia functionalities the SF does not support because they were not planned to be used in production but that the SF should support should they be used in production (e.g. cluster functionality related to E10.6).

- 1) **Non-notifiable change ("Type I change")**: is a change that does not directly affect the DA MCO Function assets, does not cause any detriment to the performance of the relevant algorithm and software and is not relevant to market participants.



2) **Fast-track change (“Type II change”)**: is a change that needs to be implemented with urgency. This type typically includes bug fixes and the application of corrective measures.



3) **Standard change (“Type III change”)**: is a change that has a potential detrimental impact on the performance of the algorithm and/or market participants. Any request for change not being of type I, type II or type IV shall be considered as type III.

Type III changes are divided into 2 subcategories:

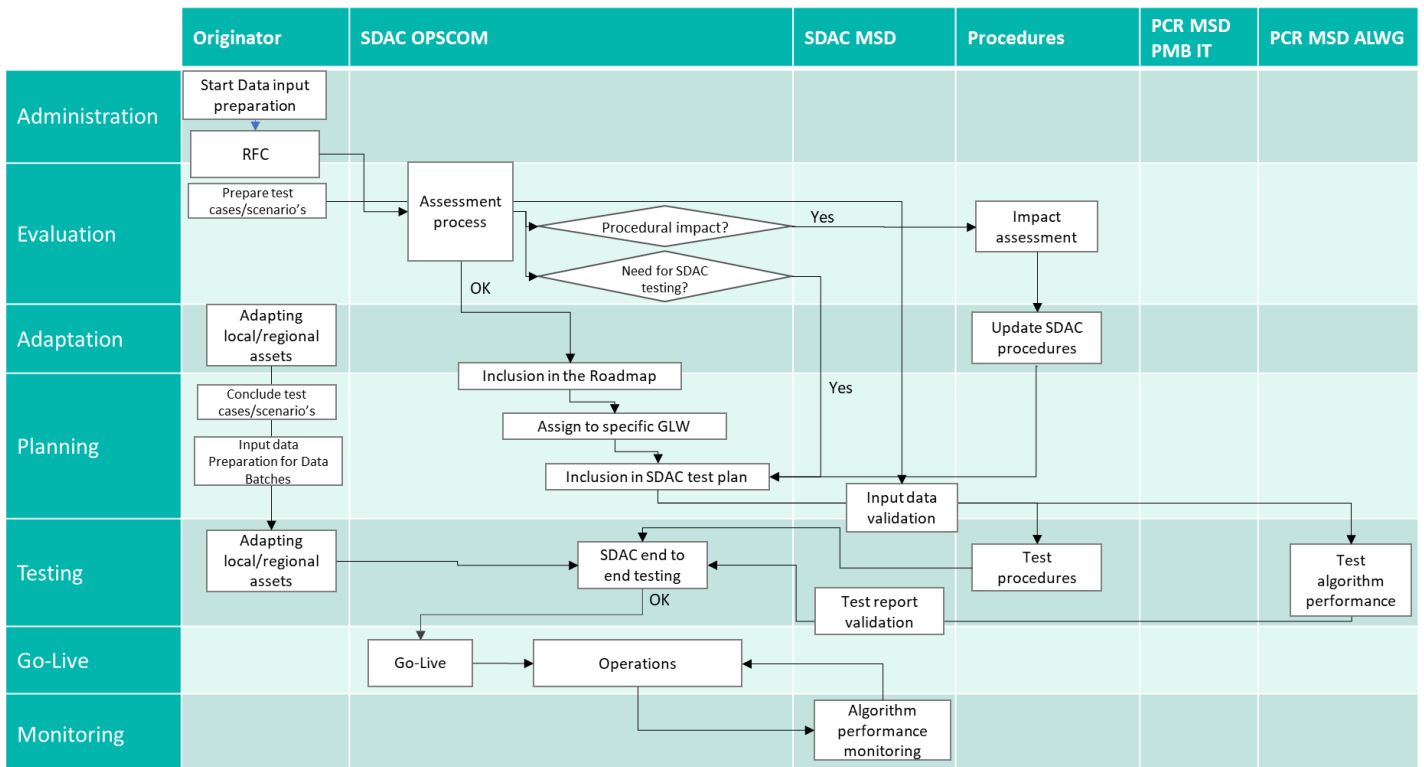
Type of RfC	Description	Type number
Topological change	any type of RfC that can go live without any change to be made to Euphemia/PMB (update of topology, SCF, or by activating existing features already available in Euphemia/PMB but not yet used in production. Such changes also will require an update of Simulation Facility.	Type IIIa
Functionality change	without any changes in Euphemia and/or PMB the feature cannot be used (change in Euphemia/PMB is needed)	Type IIIb
Euphemia/PMB release update	update of Euphemia/PMB which combines several new features that need to be implemented and which subsequently will also require an update of the Simulation Facility at a later stage	

• **(PCR) RfCs handling into new PMB / Euphemia releases:**

NEMO-only RfCs:

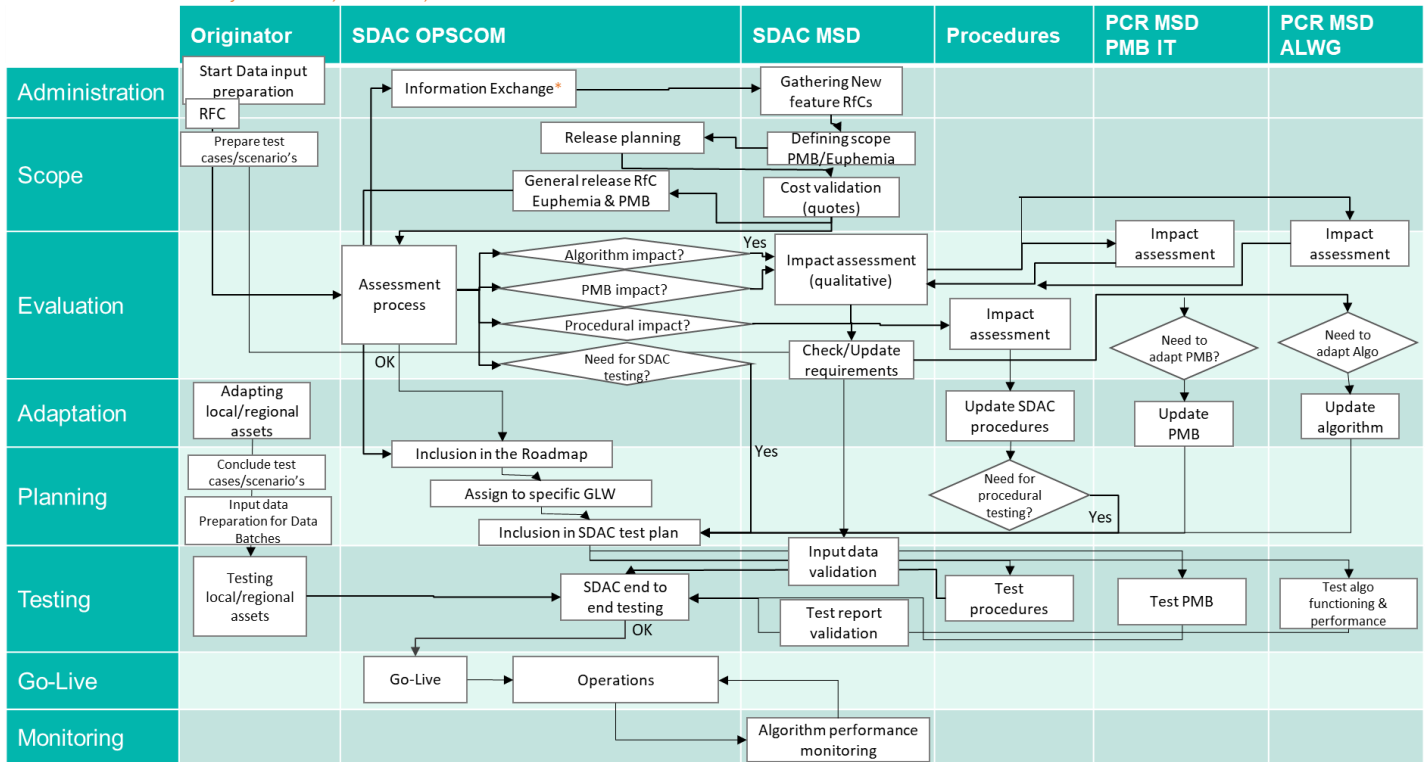
- In principle these RfCs are normal type III a-b RfCs, meaning that such RfC must be shared to the SDAC OPSCOM and follow the SDAC CCP. Without such submission of these type of RfCs to SDAC OPSCOM, the RfC cannot be implemented.
- Detailed follow up of the implementation can be done in NEMO governance if appropriate, however a regular status update towards SDAC OPSCOM & SDAC MSD will be required.
- SDAC TFs can at any time request additional information or a dedicated discussion on this type of RfCs.
- Examples of these RfCs are provided in the Annex.

a) *Standard change (“Type IIIa change”): A type III change not requiring a change in the DA MCO Function assets (e.g. change of topology, will be a type IIIa change.*



b) Standard change (“Type IIIb change”): Type III changes requiring a change in the DA MCO Function assets (Euphemia/PMB) will be categorized as a Type IIIb change (functionality change, Euphemia/PMB release update)

* SDAC OPSCOM shall also inform the SF TF, SIDC IDA SG, and other related bodies

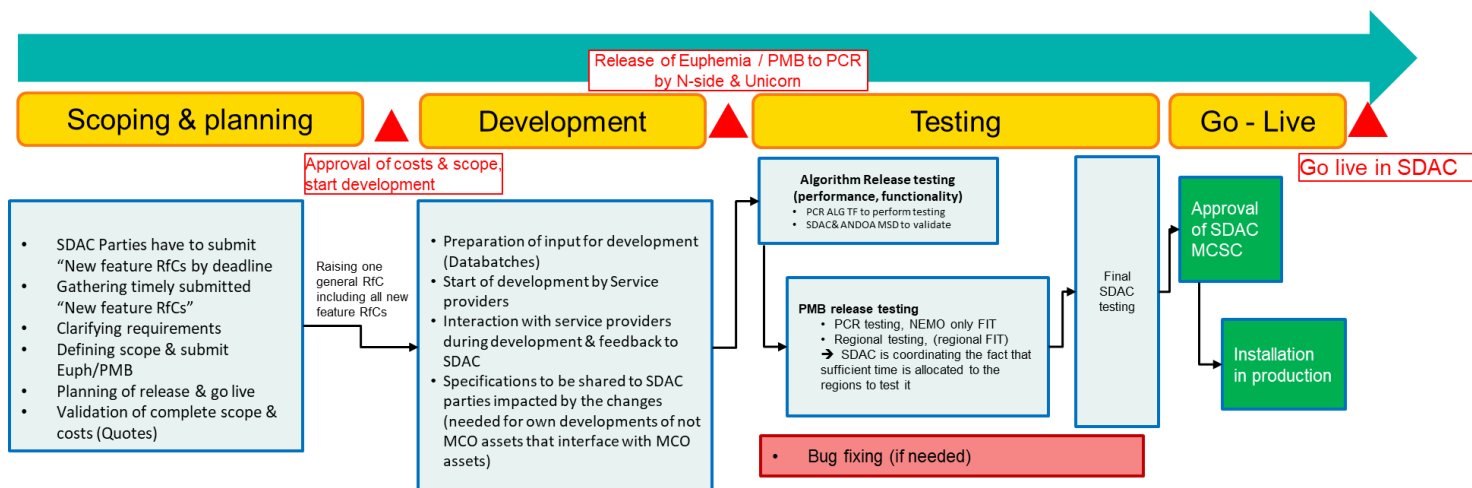


The process flow in illustration is for the positive flows only. It needs to be understood that at least on expert level in Procedures, PCR MSD PMB IT or PCR MSD ALWG the change request can be rejected, send back to originator with improvement proposal(s) or with alternate design proposal(s). In this case in SDAC MSD, involved parties have to discuss how to proceed and finally agree on the way forward. In general, the change request flow diagram does also include possibility for a negative decision in each decision point.

For the case of a need to update procedures as part of a standard change request (“Type III” change); according to DAOA Article 25.1 all SDAC Operational Procedural updates require SDAC MCSC approval. In principle all procedural changes classify as minor (“Type I” change) and therefore does not require MCSC approval.

With that, final versions of the updated procedures are sometimes produced very late in the process and so it may complicate the MCSC approval process. It was therefore approved by SDAC MCSC that, in deviation to what is stated in Article 25.1 DAOA, changes of SDAC Operational Procedures – except changes to the Change Control Procedure (SDAC_OTH_05) itself - will be approved by SDAC OPSCOM (and not by the SDAC MCSC itself), in line with the process set forth in the present document. SDAC OPSCOM shall inform the SDAC MCSC of such changes made to the SDAC Operational Procedures.

For the Type IIIb RfCs the End2End process for an Euphemia/PMB release is visualized in the picture below.



Scoping and Planning:

- Scoping and planning step of the next Euphemia and PMB release is done in SDAC MSD by ensuring the early involvement of TSOs, joint project (SDAC) in scoping of Euphemia & PMB release.
 - Provision of a status on which RfCs will be considered for the upcoming releases, which prioritization (if any) will be needed.
 - Ensure to take timely into scope those RfCs and their particular needs / request which are dependent of a new version of PMB / Euphemia.
 - Ensure to deliver specification and requirements for changes on a final (complete) version in the scoping phase is key for a better & trustworthy general plan.
 - Making sure the dependencies between Euphemia and PMB requirements in development are guaranteed by issuing one general type IIIb RfC including all new feature RfCs for the Euphemia and PMB release before the start of the development.
 - Need for requirements in RfCs, algorithm providers make specifications based on these requirements; therefore, there is a dependency in timeline
- To ensure timely consideration of RfCs for a next Euphemia/PMB release it must be detected that these changes are effectively requiring a change in PMB and/or Euphemia. Such RfCs therefore must be timely submitted towards the SDAC OPSCOM. When submitting these RfCs it must be indicated and detected if an impact on Euphemia and/or PMB is expected
- SDAC MSD is responsible to ensure timely approval of the quotes (costs) provided by the service provider to close the scope and start development without causing any delays. This will be done in cooperation with the RfC initiators and respective PCR TF.
- **Development:**
 - Process should be facilitated on SDAC level in collaboration with the service providers, PCR / ANDOA.
 - Type IIIb RfCs related to an Algorithm or PMB release must be timely submitted to the SDAC OPSCOM, 6 months (at the very latest 3 months) before the start of its development by the external service providers.
 - A general Type IIIb RfC on the development of the next Euphemia/PMB release including all the changes must be submitted to the SDAC OPSCOM after the quotes from service providers.

- Clear reporting / discussion within SDAC of PMB / Euphemia progress & testing with regards to future production releases.
- **Testing**
 - Early involvement of TSOs in tests for the validation of the algorithm and PMB is important to have a stable, good, and reliable go-live preparation. It mainly concerns contribution of TSOs on technical expertise and insights on cases to be assessed.
 - Defining test scenarios, required input data from NEMOs/TSOs, and corresponding acceptance criteria for the respective release.
 - Assessing outcomes of tests by SDAC MSD and ANDOA MSD

It must be noted that there are differences between testing possibilities of PMB and Euphemia. Euphemia can be tested earlier than PMB. PMB can be tested once the Euphemia release is done.

 - Ambition is to uncover design / result issues timely instead of very late in the development process. An early detection or a right detection still has a possibility to be fixed / mitigated, whereas late discoveries either have impact on the expected go-live date (or even worse are only detected when in operations, which is not acceptable as worst-case scenario).
 - Algorithm performance testing coordinated on SDAC MSD TF level
 - When SDAC MSD performing the qualitative impact assessment, it initiates the process for the Algorithm performance tests
 - PCR will be asked which information and input is needed for performing the performance assessment
 - The originator of the RfC will be requested to provide timely the required input data
 - When all input is received, SDAC MSD tasks PCR MSD ALG to start with the performance assessment, the execution of the tests & running systems for performing the Algorithm acceptance tests remains a responsibility of NEMOs (PCR MSD ALG).
 - NEMOs provides the algorithm test reports to the SDAC MSD for validation.
 - After the validation of SDAC MSD, SDAC MSD informs SDAC OPSCOM for the sufficient algorithm performance which gives a green light for the go-live.
 - When a PMB release (together with the Euphemia release) is ready and first validated by NEMOs and subsequently by all impacted regions, there is also a validation process taking place in SDAC OPSCOM.
- **Go-live**
 - SDAC OPSCOM plans the release and go-live dates (time boxing) which can be a facilitator for the entire process. It creates direct transparency on the dates & timings.
 - To be verified with go-live windows mechanism introduced by the AM.
 - The objective is to have timeline templates to be available and proposed by default for each year/release cycle by SDAC OPSCOM. This default timeline can then also be communicated with regulators for transparency, making them aware of the process/lead times that are to be taken into account. Some flexibility must be kept in case an urgent implementation is needed (eg regulatory requirement, ...).
- **Decision making**

- Involvement of TSOs on the decision taking of Euphemia and PMB scopes, timings, budgets & developments (co-decision of TSOs and NEMOs on SDAC/MCSC level must be ensured).
- How to handle subset of issues? (e.g. changes that only concerns NEMOs)
 - It should not be with the intention that the process is blocked when the feature is not fully relevant to the other party.
 - However, budget aspects and limitations in supportability of the scope are matters that concern all parties are therefore requiring discussion and validation on joint level.
 - It must be made very clear for each topic what is its objective, and its impact on the foreseen release in its entirety (timing & scope) as well as the budget.
- It must be ensured that there is a formal confirmation of PCR / ANDOA on the scope proposed. This aims to ensure alignment between decisions on joint level and the ones on NEMO / TSO side. This may be especially valuable as an input for the joint decision-making level, as PCR parties are also present in the joint levels.

Overview on Contractual relations with regards to DA MCO Function assets

Transparency on the contractual framework related to PMB and Euphemia (maintenance contracts, R&D contracts, release contracts, ...) is required. Objective is to make the boundaries & rules clear & transparently to all parties & relevant TF when requested or relevant (e.g. costs/development rates, contractual constraints...), so that these can be taken into account in the improved processes.

Note, that this does not require the entire contracts themselves – which are confidential - to be shared.

Furthermore, parties are aware that there are differences between SDAC and SIDC, both from the current contractual status as well as for the future related to IDAs which bring additional challenges and can create differences in the contractual set-up.

- Contractual arrangements with Service Providers detailed on NEMO contracts, regulated by ANDOA contract with conditions specified under “Third Party Service Provider Agreement”:
 - MSSA contract with N-Side (Euphemia)
 - SP Agreement with UNICORN (PMB).
 - Maintenance contract with Trimane (Simulation Facility)

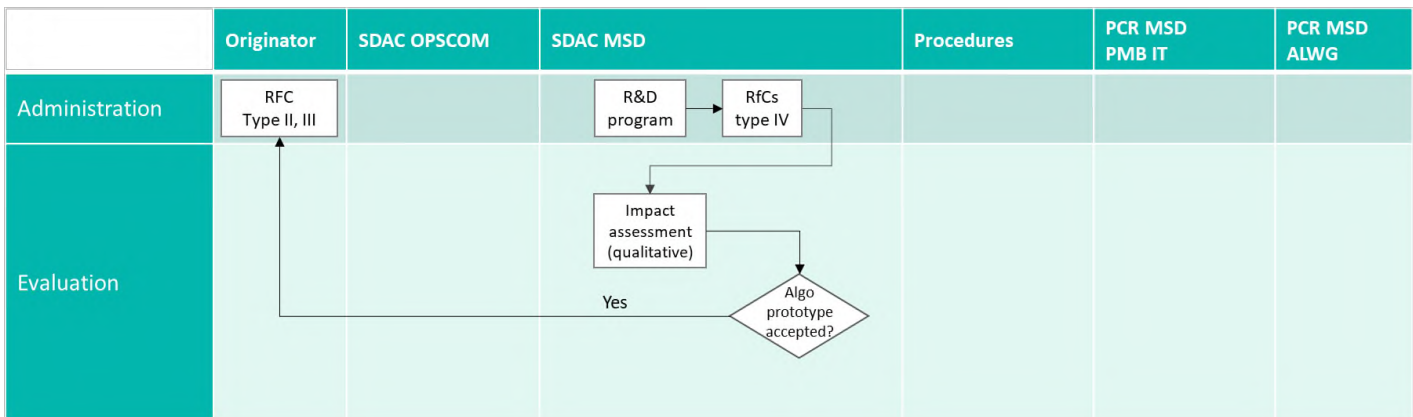
Roles & Responsibilities: RACI Matrix

In order to clarify the roles and responsibilities of each SDAC TFs, NEMO only bodies, and external parties in the RfC End2End process of Euphemia/PMB release, a RACI Matrix will be prepared which will be uploaded on a common folder.

- 4) **Research and Development change (“Type IV change”)**: is a change aimed at activating the research and development analysis on the specific functionality involved. The assessment is carried out in the test framework according to the relevant research and development. All NEMOs in coordination with all TSOs might be required to create algorithm prototypes in order to implement the list of type IV changes.

If the outcome of the research and development is positive and improves beyond the thresholds defined in the Algorithm methodology for accepting the algorithm prototype, then a type II or III change might be issued for implementing the prototyped changes; it is expected that for most change request of type IV, request for changes of Type III will follow.

Before a change request of Type IV will finally be transferred to a change of Type II or III, a check is needed to ensure that all needed experiences, assumptions and information from the R&D stream are clear and well described in order to initiate the implementation phase of the respective R&D RfC. This needs to be included in the Type II/Type III RfC that is finally submitted to SDAC OPSCOM.



3. Procedure for Type III RfCs

Change requested by SDAC parties or by external parties involved with SDAC parties (Standard change, Type III change)

This procedure describes the Change control procedure for a Standard Change (Type III) requested by a party/parties part of the DAOA directly or by external parties involved with parties of the DAOA.

This chapter details the procedure for Standard Changes (Type III change according to AM) which shall cover the relevant steps and relevant taskforces interactions; those will mostly be part at some stage of the other categories of change requests (Type I, II and IV) as well.

In case of a request from an external party, the change request will be filed through the party which is member of the DAOA, being responsible to provide all needed information on due time.

Changes requested by local competent authorities or European competent authorities will follow a similar process; if a change starts as a Research and development change (“Type IV” change) as part of an R&D program, and it’s decided, after evaluation with qualitative assessment in SDAC MSD, to be included on a new algorithm prototype, then a Type II or III (mostly expected) change request shall be raised; from that moment on, the normal request for change process shall be carried out for the implementation of the change.

A high-level summary will be elaborated in the next section, without too many details related to time obligations. The basic process-flow for a new Type III change will be the following:

- **Submission phase: steps envisaged to be done long in advance the Go-Live (prior GLWs)**
 - An originator will raise a new change request by the need to implement a change in SDAC.
 - Together with the RfC form (see Annex 1) or later the originator needs to submit all other material needed to assess the change, such as the test data with the correct format, expected impact on different DA MCO Function assets, if new developments are required, etc.
 - The change request content will be evaluated in SDAC OPSCOM, the test data and requirements will be analyzed under SDAC MSD (in coordination with PCR MSD ALWG and PMB/IT); once those are validated the change request will be **accepted** to proceed with the implementation, taking for granted that the RfC inputs are validated: at this stage, go-Live date is expected to be in the {current GLW + 2} or later.
- **Algorithm assessment: steps envisaged to be done during the preceding Go-Live window**
 - Development
 - Algorithm tests and simulations shall be completed (validated), with positive outcome.
 - Decision-making for implementation based on the assessment on the material (data) content.
- **Tests phase: steps envisaged to be done during the Go-Live window which the go-Live date will occur**
 - Test phases (NEMOs, regional, joint NEMO-TSO) related to PMB system new functionalities/requirements with the algorithm(s), under management by different SDAC WGs, including regional preparation for changes, procedural changes and any other

envisaged preparation due to impact on DA MCO Function assets for the production go-Live.

- Once all tests are successfully completed, with RfC ready to go-Live, official SDAC MCSC approval will be asked during the last MCSC meeting previous to the implementation of the change, where tests are expected to be finalized; if that's not the case, SDAC OPSCOM will ask for approval in case no controversy happens until the complete test phase is finalized.
- Latest technical preparations for the go-Live, communications and Operational preparations.

Detailed overview of the procedure for a Standard request for change – (Type IIIa and Type IIIb)

NB. SDAC OPSCOM can always decide to implement a change faster than the normal timings described in the procedure.

Note: As an important remark and guidance to understand all below needed steps and the process to perform those and so to be able to implement a new request for change under SDAC, the following list shall not be considered as a rigid sequential order of needed steps for it but just a general approximation on the usual steps that shall be part of the life-cycle for all kind of standard change requests. With that, chronological order of the steps is considered as a guidance and not completely as an obligation, some steps may be parallelized, some may need a step-back and reconsideration/re-evaluation, depending on each particular case, so timings are only considered as a rough approximation, where SDAC WGs will be in the lead for the process based on their expertise role.

Step 1. A Party or parties involved in SDAC (NEMO / TSO) **identify** the need for a change and submits the Request for Change to the SDAC OPSCOM.

A quick check is done by the requestor to know if the change concerns a DA MCO Function asset or not.

Step 2. Preliminary impact assessment (qualitative) of the change is done by requestor (see impact assessment section of the RfC template), following change control procedure in accordance with contractual structures. The conclusion of this preliminary assessment will end up in one of the following options, finally confirmed or amended by SDAC OPSCOM.

a) No / minor impact on MCO Function assets: Type I change request needed. The Type I RfC shall be notified to SDAC OPSCOM (PMO, Chairman).

- In this case, no SDAC MCSC validation is required, but the SDAC OPSCOM will be responsible for the allocation of a dedicated testing time slot according to the global SDAC test planning.

b) Impact on MCO Function assets (i.e. a Type III RfC): notify SDAC OPSCOM (PMO, Chairman). **Go to step 3.**

Step 3. If an impact is identified, requestor shall notify SDAC OPSCOM (PMO, Chairman) on the change including the preliminary impact assessment. As much information and details as possible should be provided to facilitate decision taking in SDAC MCSC/SDAC OPSCOM and to accelerate processing the change, based on the **material** included in Article 15.2 of the Algorithm Methodology and considered mandatory:

- a) The purpose of the request for change, according to Article 14(1) of the AM and the general description of the request for change;
- b) Indication of the type of request for change according to Article 14(3) of the AM;
- c) Originator;

- d) Issuing date;
- e) Expected go-live date;
- f) Fully specified requirements;
- g) Anticipated usage of the functionality
- h) Input data for the simulations;
- i) Estimated effect on other processes or systems (**qualitative**);
- j) Risk assessment;
- k) Bidding zones, scheduling areas or NEMO trading hubs affected by the implementation of the request for change;
- l) Specification of the cost categorization in accordance with Article 80(2) of the CACM Regulation.

All NEMOs in cooperation with all TSOs (i.e SDAC OPSCOM) can decide at any moment to contact the originator with the purpose of requesting an additional information on the request for change. The originator is always entitled to receive all relevant information regarding the status of its request for change.

The originator shall send each request for change to SDAC OPSCOM by no later than at the end of the second go-live window prior to the go-live window during which the go-live date of such request for change is expected to occur, according to Article 16.5 of AM.

If the material provided for the assessment (Article 15.2 of AM) is considered **incomplete** (determined at least by SDAC OPSCOM and SDAC MSD), the change can be considered validly received, but with the following conditions:

- a) Requestor/originator shall provide the list of considered options and the magnitude of new products or network elements (or constraints) to be added to the algorithm;
- b) The missing information shall be provided to SDAC OPSCOM on time for the evaluation (Article 16.5 of AM).

Step 4. SDAC OPSCOM records the receipt of the request for change in the [SDAC Change Request Register](#) and allocates a **unique number** to this request, assigns it to a specific go-live window and includes it in the SDAC test plan. This will be the next number in sequence. This number will be used to refer to the change from this point onwards. SDAC OPSCOM informs other related bodies, at least SDAC SF TF and SIDC IDA SG about the receipt of the RfC and its record in the CRR.

Step 5. Evaluation of the content of the change request at SDAC level (SDAC OPSCOM, SDAC MSD, PCR MSD PMB IT, PCR MSD ALWG), making accessible all the material, based on the Article 17.3 of AM:

- a) Correct indication of the purpose and type of the request for change, according Articles 14(1) and (2) of AM;
- b) The originator of the request for change and impacted parties;
- c) Potential prioritization criteria to be applied according to Article 15.7 of AM;
- d) Whether or not any development is required in the algorithm for the request for change, in accordance with Article 17.13 of AM;
- e) Whether or not any development is required in the PMB for the change;
- f) Whether or not there is required any change in any SDAC procedure;
- g) Assignment of the go-live window according to timings set out in Article 16 of AM and of the timeline to be followed during the assessment;
- h) Whether it fulfils the objectives of Article 3 of the CACM Regulation.

The data provided for the simulations will be forwarded in the required format to the SDAC MSD (and subsequently to ANDOA MSD) that will validate it.

In case multiple requests for change have been received with the expected go-live dates within the same go-live window, the prioritization and sub-prioritization detailed in Article 17 (7, 8 and 9) of AM shall apply (see Chapter 4).

Remark: some of the following steps (**6 to 10**) may be parallelized (not fully-sequential), when possible.

Step 6. (This step is only valid for Type IIIb RfC, not Type IIIa) In order to have a central and transparent planning of Euphemia/PMB releases, several type III RfCs, which are assigned to the same go-live window, may be combined into one “general release RfC” being a type IIIb RfC. SDAC MSD defines the scope of every new Euphemia/PMB release by gathering the respective type III RfCs into such “general release RfC” which is communicated to SDAC OPSCOM in due time to be considered in the overall planning. After the quotes for all individual RfCs being part of the “general release RfC” have been validated by SDAC MCSC, the “general release RfC” is handed over to SDAC OPSCOM to be included in the roadmap as well as in the test planning. Such planning of “general release RfCs” is foreseen at least twice a year but shall be in line with the Go-live window concept.

Step 7. If the previous evaluation by SDAC parties and SDAC groups turns out **positive**, a **go-ahead** for the change by SDAC OPSCOM will follow with next conditions to be taken into account:

- a) SDAC OPSCOM shall approve and implement type I changes within 30 days as set out in Article 19.3 of AM.
- b) **Assessment on the SDAC algorithm performance** (tests) as set out in Article 18 of AM and the thresholds defined in the AMP.
- c) In case of a general release RfC of type IIIb, and provided that the combined impact assessment in accordance with AM Article 17.3 of all the requests for change within a particular go-live window has a positive outcome, all requests for change in such go-live window shall be approved. All NEMOs in cooperation with all TSOs (i.e. SDAC OPSCOM) might, nevertheless, decide to carry out a case-by case qualitative assessment on individual requests for change considered in the **combined impact assessment** in case they collectively induce an excessive variation on the algorithm performance, even though it is below the combined acceptance criteria. SDAC OPSCOM will, therefore, expect this **individual assessment** for every change request from SDAC MSD in respect to the chronological order.
- d) All inputs from Article 19 from AM with respect to negative outcome of combined/individual impact assessment for change requests.
- e) A consultation of preliminary decision on a type III change may be decided prior to making a final decision (aimed for exceptional situations only). Decisions will be timely communicated by SDAC to the originator.
- f) In case of failure of the decision-making process, the escalation process shall be triggered according to the relevant provisions set forth in the operational contracts (DAOA).
- g) **Assessment on the PMB (tests).**

In case procedural impact had been identified, the procedures are updated accordingly.

The outcomes of the evaluation of requests for change shall be included in an **assessment report**, containing all the relevant information on the process followed (Article 17.12 of AM and objectives set out in Articles 3 and 37 of the CACM Regulation).

For the decision to allow the go-live of requests for change, all assessments for requests for change and the version of the respective algorithm that shall be used in the evaluation process **shall be the same like the one that is expected to be used in the implementation of the request for change**. If a version of the algorithm is not timely available, an alternative version of the algorithm (preceding version or prototype) can be used (e.g., for performance evaluation) if this is considered as acceptable by the relevant assessment body (SDAC OPSCOM, SDAC MSD).

The assessment process and the decisions shall be concluded, at the latest, within the go-live window preceding the one in which the go-live date will occur (Article 16.7 of AM).

Step 8. Review of the evaluation & assessment done by SDAC parties and **decision-making** for the implementation of the change according to Article 19.2 of AM.

All NEMOs in cooperation with all TSOs in SDAC OPSCOM shall decide on the request for change and shall issue for each assessed request for change one of the following possible decisions:

- a) **Accepted:** the request for change is ready to be used in production and the request for change shall be implemented up to {current GLW + 2} or later, depending on go-Live plan schema organization by SDAC OPSCOM;
- b) **Rejected:** the implementation of the request for change is not compatible with the security of operation, adequate performance criteria, resource constraints or does not fulfil the objectives of the CACM Regulation;
- c) **Postponed:** the implementation of the request for change could be compatible to security of operation and adequate performance criteria, but it is necessary to postpone the go-live date or due to resources constraints; or
- d) **Amended:** the request for change as submitted is not fully compliant with security of operation and/or adequate performance criteria or demands disproportionate resources compared to its benefits, but could be compliant and accepted if appropriate amendments of it are carried out.

Step 9. SDAC OPSCOM will request SDAC MCSC **approval for implementation of the change** with impact at SDAC level, usually in the next SDAC MCSC meeting including all material showing the impact of the change at SDAC level and decision-making process made (if needed).

- The SDAC MCSC may object to the implementation of the change with duly motivated reasons and inform the originator of the change request accordingly. If on the contrary SDAC MCSC approval is given for the implementation of the change, **continue to step 10**.
- At the end of the assessment process, usually end of the previous Go-Live windows, a public report shall be issued by SDAC after the decision on all the request for changes indicating the decision, the reason for the decision, the principles behind the decision and the assessment report as referred to in Article 17.12 and Article 19.11 of AM, in order to ensure transparency on the change request process.

Step 10. Organization of the implementation of the change. The SDAC OPSCOM needs to coordinate with the impacted parties the implementation of the change, e.g. planning (considered in the previous assessment but may be updated by need closer to the date), complete testing (SDAC OPSCOM will allocate dedicated testing time slot according to the global SDAC testing).

With regard to testing, local and regional tests and algorithm performance tests are carried out before SDAC end-to-end testing can be performed. The test report related to algorithm performance is validated by SDAC MSD.

The implementation of a change should be handled as a separate project, whereas this step shall happen, according to AM, within the go-live window which the go-live date will occur not limited to preceding go-live windows.

Step 11. Once all tests are successfully performed (RfC will be in status “*ready to go*”), **RfC is ready for go-live; approval from MCSC** is asked, if not yet done, at the last MCSC before the go-live, hoping that all tests are already ended; if not SDAC OPSCOM will ask for a preliminary approval in case there are no controversy.

Preparation of the go-live (all tests considered already performed): production configuration preparation (e.g. SCF) and organization of the go-live date according to the calendar (Go-Live sequence).

Step 12. Monitoring, communication (all parties/groups involved in SDAC) and **decision-making** for the project **until the go-Live** by SDAC working groups, including after the change is finally implemented.

4. Impact Allocation

The overall impact of implementing a change and the assessment whether the change has material impact on SDAC level or not depends on the following criteria:

1. Does the requested change require an update of one of the DA MCO Function assets?

If this is the case, the change is material for SDAC.

2. Does the change requested by the originator lead to changes in systems / procedures of other SDAC parties?

If this is the case, the change is material for SDAC. However, if the change can be dealt with locally, then it might not result in a change for SDAC.

3. Does the requested change require integration testing at SDAC level?

If this is the case, the change is material for SDAC.

4. Does the requested change require regression testing at SDAC level?

If this is the case, the change is material for SDAC.

5. Does the change have an impact on the input data (network data, order data) or market results, i.e. does the implementation of the change materially affect the price coupling calculation?

If this is the case, the change is material for SDAC.

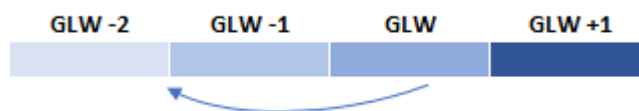
6. Does the failing of the change implementation cause the SDAC MC Coupling not to work and lead to partial or full decoupling?

If this is the case, the change is material for SDAC.

5. Go-Live window concept, principles and go-Live windows mechanism establishment

Article 16 of the Algorithm methodology (AM) treats the concept of Go-live windows (or GLW(s)) for change requests in detail. The GLW concept is in particular applicable to Type III RfCs. Some important concepts defined are listed below:

- The assessment of requests for change shall be carried out periodically by all NEMOs in cooperation with all TSOs (in SDAC OPSCOM and SDAC MSD) in go-live windows, based on the expected go-live date of the request for change.
- The periodic assessment of a request for change with an expected go-live date within a specific go-live window shall include all requests for change with an expected go-live date within the same go-live window in such a manner as to allow a cumulative impact assessment.
- The SDAC OPSCOM shall define the number of go-live windows in each calendar year. Additional go-live windows can be introduced by all NEMOs in cooperation with all TSOs (i.e. SDAC OPSCOM) as a new ad-hoc go-live window or by increasing the frequency of regular go-live windows. There shall be at least two go-live windows in a calendar year.
- The originator shall send a request for change to the all NEMOs in cooperation with all TSOs (i.e. to the SDAC OPSCOM) by no later than at the end of the second go-live window prior to the go-live window during which such request for change is expected to go-live (AM 16.5).
 - If the originator submits the requests for change to SDAC OPSCOM before this set time, the requests for change can be considered validly received even if they are not reporting all information under AM Article 15.2. The originator will be entitled to submit missing information according to the agreed time.



- The assessment process of requests for change and the decisions shall be concluded within the go-live window preceding the one in which the go-live will occur.
- According to Article 17 of the Algorithm methodology, there are three levels of prioritization for request for changes received with expected go-live dates within the same Go-Live Window. Level 1 of prioritization is detailed in AM Article 17.7 and below:
 - Type II change (fast track).
 - Requests for change in accordance with AM Article 14.2 (i.e. RfCs which are a direct legal requirement pursuant to the CACM Regulation).
 - Requests for change from the roadmap, received in accordance with AM Article 10.
 - Other requests for change.
- Other prioritization rules are further detailed within AM Articles 17.8 and 17.9.
- The outcomes of the assessment of requests for change shall be included in an assessment report, containing all the relevant information on the process followed, with all detailed information, according to AM Article 17.12.

Based on these concepts, agreed principles for the management of Go-Live windows (GLW) and the establishment of the Go-Live window mechanism for a calendar year are the following:

1. A Go-Live window proposal for next year shall be established by SDAC OPSCOM and sent to SDAC MSD for revision.
2. SDAC OPSCOM proposal is, based on experience, to have shorter Go-Live windows (give more flexibility), 2/3 months. This may be adjusted afterwards. GLW flexibility: between the 1-2 month proposed by SDAC OPSCOM and a maximum of 6 months proposed in AM.
3. When the RfC is delayed due to performance issues or when the originator wants a postponement, RfC is delayed and needs to be shifted to another Go-Live window. To avoid too much delay, Go-Live windows should not be of 6 months to be able to take advantage of the already performed work and tests and re-plan the go-Live closer.
4. Go-Live date may be changed within the same Go-Live window, if feasible, not directly postponed for another GLW.
5. Go-Live window mechanism will be much more demanding (in terms of more effort/pressure) from the testing side to achieve all necessary requirements. This needs to be done within the same GLW.

5.1 Roadmap elaboration principles (cf. AM Article 10)

Every year all NEMOs in cooperation with all TSOs shall agree on a multi-year roadmap incorporating all requests for change related to:

- a) new releases of the SDAC and SIDC algorithms and software;
- b) amendments of requirements of the SDAC and SIDC algorithms;
- c) outcomes of the research and development activity, according to Article 11;
- d) major amendments in the usage of the existing functionalities; and
- e) future requirements as defined in the Annex 1 and 2 of the Algorithm methodology.

This roadmap shall be updated at the end of each year and shall include RfCs with the expected go-live dates for at least next 24 months. [REDACTED]

Experiences from the roadmap review processes:

Change request register should be regularly updated to ensure all the changes are timely captured for yearly external reporting. Party responsible for the external report preparations should communicate the timelines and expectations early enough to ensure deadlines are respected.

All NEMOs in cooperation with all TSOs (i.e. SDAC OPSCOM) shall elaborate a feasible calendar for the implementation of each request for change. In order to include a request for change in the roadmap, the originator shall prepare and submit the related requests for change, which shall include at least information under AM Article 15(2), letters a), b), c), d), e), i), j), k), l), and the input data for the preparations of external reporting.

The requests for change in the roadmap shall have a specific priority according to Article 17(7), under the condition that the complete set of information requested under Article 15(2) is received before the time requested under Article 16(5). Once the information is completely received, the request for change shall be assessed according to Article 17.

6. Corrective measures - Algorithm performance management (AM Article 12)

Details of the corrective measure's application steps are explained in the Annex 3 of this document.

In case all NEMOs detect an unanticipated degradation of the DA algorithm performance below the thresholds defined in the Algorithm methodology due to an overall effective usage higher than the usage range, all operational NEMOs in cooperation with all TSOs may decide to apply specific corrective measures with the aim to maintain an adequate performance of the SDAC algorithm. Corrective measures shall be applied also in cases when the algorithm performance is expected to be degraded by a Request for Change, which cannot be rejected or postponed. The definition and application of corrective measures are provided in Algorithm Methodology, article 12.

PCR MSD ALWG will setup the monitoring process according to the Algorithm monitoring indicators (see Chapter 6 Monitoring Algorithm performance - Operations). Afterwards, SDAC MSD will analyze the information. The monitoring task is expected to be done once every month. Monitoring algorithm indicators and thresholds are already defined within the Algorithm monitoring methodology and Algorithm monitoring procedure.

In case that corrective measures need to be applied due to degradation of the DA algorithm performance, SDAC and PCR Algorithm groups will discuss and propose possible options of application which shall in any case be decided and approved, before their implementation, by MCSC. Legal TF shall also be consulted and part of the application and decision process.

In the event of a need to apply corrective measures, needed actions will be carried out under management of SDAC MSD, which shall define the set of measures that have to be considered in the exploration of potential solutions to the performance degradation. In order to conduct these activities, the set of indicators defined in the AMM shall be used, focusing mainly on the performance indicators (time to first solution) and algorithm usage indicators. Specific indicators may be added to the ones defined in AMM when considered representative for the diagnosis of the problem and the validation of the proposed solution. If the decided corrective measure consists in limitation of usage of products or requirements, the usage shall be limited according to the sharing rules (AM art.12 (8)). It is to be noted that corrective measures shall be implemented in an objective and non-discriminatory manner (AM art. 12 (3), art. 12 (11)).

With this, there should be an assessment by SDAC MSD on the selected options to be applied as corrective measures. On the application of such corrective measures, the Algorithm performance shall show effective evidence on the expected improvement.

Once a measure is decided by SDAC MCSC, a Type II or a Type III Request for Change will be triggered to implement this future change. SDAC OPSCOM will follow-up the performance in Operations, in order to verify the effective effect of such corrective measure, in parallel to the continuous monitoring by Algorithm TFs.

All NEMOs have obligations to publish information about the corrective measures:

- All NEMOs shall announce publicly any introduction or discontinuation of a corrective measure at least seven calendar days before its introduction or discontinuation and maintain an up-to-date publicly accessible list of currently applied corrective measures (AM, Art. 12(12)).
- No later than four weeks after the introduction of a corrective measure, all NEMOs shall publish a report indicating the corrective measure applied and the reasons for applying it. After the discontinuation of a corrective measure, the report shall be updated with additional information on the future measures planned by all NEMOs to address the problems that have caused the application of a corrective measure (AM, Art. 12(13)).

The application of corrective measures shall be limited to eight months: If the algorithm performance cannot be restored within this deadline, NEMOs shall develop a proposal of the Algorithm methodology or the Terms and conditions on SDAC products, and submit it for approval by the expiration of the abovementioned deadline. The application of corrective measures shall, in such case, be extended until the algorithm performance can be restored pursuant to amended Algorithm methodology (AM, Art. 12 (4, 5)).

7. Monitoring Algorithm performance - Operations

All NEMOs in coordination with all TSOs, shall monitor the performance of the SDAC algorithm in compliance with the CACM regulation and the Algorithm monitoring methodology (AMM). The principles for the monitoring are set out in the AM and AMM and in the associated monitoring procedures.

For the purpose of monitoring the SDAC algorithm the performance indicators described under Annex IV – Title 3, 4 and 5 of the AMM shall be used.

- **Title 3 – Indicators on SDAC algorithm performance:**
 - Indicators on algorithm ability to maximize economic surplus.
 - Indicators on SDAC algorithm repeatability.
 - Indicators on algorithm scalability.
- **Title 4 – Indicators on SDAC algorithm usage:**
 - Indicators to describe the usage of SDAC products.
 - Indicators to describe the geographical extension of the SDAC.
 - Indicators to describe the network constraints.
- **Title 5 – Indicators on the SDAC algorithm output:**
 - Indicators to describe the output of maximization of economic surplus.
 - Indicators to describe the status of orders.
 - Indicators to describe the IT calculation process.

The algorithm performance shall be measured, therefore, against the thresholds specified in the Annex IV (“*DA monitoring*”) of the AM and AMP.

Specific steps are foreseen if the two following situation occurs:

1. **Unanticipated degradation of the algorithms’ performance** below the thresholds referred to in Article 3(3) of Annex 4 of AM.
 - a. In this situation, a Request for Change Type II (“*Fast track change*”) or Type III (“*Standard change*”) will be raised.
2. **Non-compliance with an implemented functionality** is detected according to Article 3(3) of Annex 4.

In the second case, all NEMOs in cooperation with all TSOs shall jointly (AM, art.8 (2)):

- a) promptly inform all regulatory authorities and ACER;
- b) investigate to the fullest extent possible and share its findings with relevant stakeholder fora organised in accordance with Article 11 of the CACM Regulation;
- c) evaluate any potential improvement of the algorithm performance, to be introduced following a request for change or following research and development activity as described in Article 11;
- d) communicate to all regulatory authorities the solution identified, supported by relevant documentation; and
- e) whenever the conditions described in Article 12(1) apply, initiate the request for change process described in that Article 12 (corrective measures).

Once the situation will become stable in terms of performance by the algorithm, indicators shall be restored to the original (previous) values in a way that the thresholds specified in the Annex IV of AMM and AMP will be respected all along the process.

Annex 1: Request for Change Form

Below is the change request form to be used when notifying the SDAC OPSCOM of a change, including the SDAC impact assessment.

Request For Change			RFC No: RFC/ [The RFC number will be filled in by the SDAC OPSCOM. This will just be the next number in sequence.]
Originating Company [This box contains the name of the originator raising the RFC and, if necessary, their role in this instance.]	Name of Originator [Name of the person completing the RFC.]	Name of CR Owner Name of the person who has ownership of this submitted CR	Date Raised [Date the RFC was raised]
Title of Change [The title of the change is simply a header giving some indication of the nature of the change and which may be used to refer to the change.]			
Section A: Reason for change			
Description of Reason for Change/Problem/Issue: [This should provide a description of the reason for introducing the change, whether it is some new user requirement, a change of functionality, a bug fix, whether the change is driven by a third party, etc. The impact of not doing the change should be described, particularly if it is a bug fix or some other remedial action. This will allow the cost of the change and the risk of doing the change to be compared to the cost/risk of not doing it. It should provide as much detail as possible so that any proposed solution can be defined to resolve the problem or issue in the best way. If a solution is being proposed then the description of the problem/issue may be less detailed in this section.]			

Request For Change	RFC No: RFC/ [The RFC number will be filled in by the SDAC OPSCOM. This will just be the next number in sequence.]		
Section B – Solution Analysis			
Proposed Solution			
[This describes how the proposed solution resolves the problem/issue identified. It should address all the aspects of the change/problem/issue described in Section A.]			
Risks Associated with Proposed Solution			
[Any risks associated with the development. Implementation or operation of the proposed solution should be identified. If there are specific risks associated with individual Components that are not covered in Section C these should be detailed here. Also indicate the risk caused if the change is not implemented.]			
Assessment of the delivery of the change			
[This section must describe the approximate timescale by when the change must be implemented, what is the urgency of the change request, is there currently a work around or not, how long can we continue with this work around in production etc.]			
Section C – Impact Assessment at SDAC level			
Impact at SDAC level			
[This describes the impact implementing the proposed change at SDAC level, i.e. impact on other SDAC Party's systems or procedures, will the RfC impact the Algorithm & PMB and thus requires a new release of a DA MCO Function asset, need for testing at SDAC level, etc. (to be indicated in the table below). Furthermore, the SDAC OPSCOM Chair will indicate here the dedicated test time slot for the Change.]			
#	Impacted element(s)	Impact description	Organizational body to be involved
1	Procedures	Not applicable	SDAC OPSCOM
2	Contracts	Not applicable	SDAC Legal TF
3	System	Not applicable	SDAC MSD
4	DA MCO Function Asset <ul style="list-style-type: none"> • Algorithm • PMB • Simulation 	Not applicable	SDAC MSD

Request For Change		RFC No: RFC/ [The RFC number will be filled in by the SDAC OPSCOM. This will just be the next number in sequence.]	
	Facility • Other		
5	Interface • None • Euphemia-PMB • PMB-NEMO • NEMO-TSO • Other		
6	Performance	Not applicable	SDAC MSD
7	Shared Configuration File	Not applicable	ANDOA Procedures TF
8	Monthly operational report	Not applicable	SDAC OPSCOM
9	Other	Not applicable	To be decided after discussion in SDAC OPSCOM
10	No impact at all	Not applicable	SDAC OPSCOM
⇒ Need for testing?		Yes / No	
⇒ Rollback Solution in place?		Yes / No	
⇒ Are costs expected to be borne by others than the originators of the RfC.		Yes / No (if yes, by who else and what is the amount?)	
Section D – Impact Assessment at Regional level (Not expected to be prepared by SDAC)			
Impact at Regional level [This describes the impact implementing the proposed change at Regional level, i.e. impact on other Regional Party’s systems or procedures, need for testing at Regional level, etc. (to be indicated in the table below). In case changes are foreseen for multiple regions, this shall be indicated.] Region impacted: XXXX:			
#	Impacted element(s)	Impact description	Organizational body to be involved
1	Procedures		Regional OPSCOM

Request For Change			RFC No: RFC/ [The RFC number will be filled in by the SDAC OPSCOM. This will just be the next number in sequence.]
2	Contracts		Regional Legal TF
3	System		Regional OPSCOM
4	Other		To be decided after discussion in Regional OPSCOM
5	No impact at all		Regional OPSCOM
⇒ Need for Regional testing?			Yes / No
⇒ Rollback Solution in place?			Yes / No
Region impacted: YYYY:			
#	Impacted element(s)	Impact description	Organizational body to be involved
1	Procedures		Regional OPSCOM
2	Contracts		Regional Legal TF
3	System		Regional OPSCOM
4	Other		To be decided after discussion in Regional OPSCOM
5	No impact at all		Regional OPSCOM
⇒ Need for Regional testing?			Yes / No
⇒ Rollback Solution in place?			Yes / No
Delivery of Change to SDAC			
[This section describes the preferred plan/agreement on when the change can be implemented in production, e.g. on a weekend day, or a week day, a specific hour, roll back possibility needed etc. The dedicated implementation time slot will be allocated according to the global implementation planning.]			

Annex 2: NEMO-only RfC examples

Some examples of NEMO only RfCs can be found below (non-exhaustive list):

- New feature especially in PMB that regards only NEMO. *PMB, which despite the definition of DA MCO Function asset, is used only by NEMOs are for requirements by NEMO: aggregated curves, technology update, improvement in some steps, new reports, ...*
- Some patches in PMB to fix small/big problems
- Certificate changes in PMB: *exchange of file between PMBs are done also with the use of certificates; when they expire, they have to change (and they are indicated in the SCF, therefore an RfC is required but the changes regard only NEMOs).*
- Changes in communication/location of PMB of a NEMO
- Rounding on some borders
- Negative price's introduction
- Alternative configuration in Algorithm and also alpha version
- Local changes in LTS (only informative RfC)
- Activation of existing products in new bidding areas (example block in Bulgaria): but this kind of RfC will no more be a NEMO-only RfC
- New virtual brokers (without changes in topology): *example separation of the Bulgarian one from the EMCO one; this is a restructuring of the order books and sometimes (like the case of Bulgaria) this didn't affect any feature in the calculation and therefore it remained an only-NEMO RfC*
- Procedures updates
- New broker for one that was already served by someone else

Annex 3: Corrective measures application steps

Reminder of AM art. 12

The aim of applying corrective measures is to secure the reliability of the algorithm's operation, while maintaining an adequate performance of the SDAC and/or SIDC algorithms. List of possible corrective measures is specified in the AM, art.12(6):

The corrective measures referred to in paragraph 1 shall be limited to:

- a) limitations to the selection of products that NEMOs are allowed to offer;*
- b) limitations to the availability of the technical features or parameters of a product or an algorithm requirement;*
- c) limitations on the overall usage of products or requirements based on usage range; and*
- d) changes in parameters related to the operation of the SDAC and/or SIDC algorithms, or to the thresholds described in Article 1(3) of Annex 3 and Article 1(3) of Annex 4 and in the relevant DA and/or ID change control procedure*

In other words:

Products: limit their selection, limit the technical feature or parameter, limit the overall usage

Requirements: limit the technical feature or parameter, limit the overall usage

Changes in parameters related to the operation

Changes to thresholds: Art.1(3) of Annex 3 of AM: Unless specified otherwise, all the values that are defined as parameters in this methodology shall be defined in the operational procedures of the relevant operational agreements and their value will be shared in the public reports.

SUMMARY OF THE AM ARTICLE 12 – key milestones**Application steps: for both anticipated and unanticipated degradation of performance**

- 1. Initiation:** any NEMO(s) and/or TSO(s) may initiate a proposal by submitting a to all NEMOs **a RfC in accordance with Art.13.**
- 2. Evaluation and decision:** All operational NEMOs in cooperation with all TSOs shall evaluate and decide (...) **based on the evidence of the impact** a corrective measure would have on an **algorithm's performance.**
- 3. Duration:** The application of a corrective measure shall be limited to **eight months.**
- 4. Extension of duration:** all NEMOs develop **a proposal for amendment of Algorithm methodology or the Terms and conditions on SDAC products** and submit it by expiry of the deadline above (eight months).

The application of corrective measures shall, in such case, be extended until the algorithm performance can be restored pursuant to amended Algorithm methodology.
- 5. Application of corrective measures wrt evidence of impact on performance:** Corrective measures referred to in paragraph 6 should only be applied based on **evidence of the proportional impact of different product types on the algorithm performance.** Such measures may be applied on requirements pursuant to Article 14(2)¹ **only if other corrective measures prove to be infeasible or insufficient for restoring the algorithm performance.**
For the usage of products: sharing rules for usage of products or requirements to be defined in the relevant CCP, other principles described in Art.12 (8,9)
In case of the breach of limitations based on sharing rules, each NEMO shall report such events to the competent regulatory authority.
- 6. Public announcement:** All NEMOs shall **announce publicly any introduction or discontinuation** of a corrective measure at least seven calendar days before its introduction or discontinuation and **maintain an up-to-date publicly accessible list of currently applied corrective measures.**
- 7. Report on application: four weeks after the introduction** of a corrective measure, all NEMOs shall publish a report indicating the corrective measure applied and the reasons for applying it.
- 8. Update of the report after the discontinuation:** After the discontinuation of a corrective measure, the report shall be updated with additional information on the future measures planned by all NEMOs to address the problems that have caused the application of a corrective measure.

¹ AM, Art.14(2): The following requests for change shall be deemed to be a direct legal requirement pursuant to the CACM Regulation:

- a) all requirements included in the DA and ID algorithm requirements.
- b) all requirements for scalability to all bidding zones eligible to participate in SDAC and SIDC.
- c) the following requirements in accordance with the Terms and conditions on SDAC products: orders covering single MTU and the simple block orders, which are block orders, excluding linked block orders, exclusive block orders and flexible MTU orders; and
- d) the following requirements in accordance with the Terms and conditions on SIDC products: continuous single intraday coupling products and mandatory products for intraday auctions.

Process proposition – base for the CCP text

a) High level summary of the process

The process is different for anticipated and unanticipated degradation of performance.

1. Detection and diagnosis of the problem (How to start the performance restoration process)
 - Identification of the problem based on monitoring and performance (TTFS) indicators and the occurrence of operation events (repetitive calculation time extensions, full decoupling, ...) and elaboration of analysis using AMM indicators, which can be complemented when other indicators defined ad-hoc for the proper diagnosis of the problem.
 - Proposition of different solutions including CM, and ad hoc solutions proposed by the provider.
2. How to identify the possible CM
 - The identification of the candidates for corrective measure application will be selected by SDAC MSD from a look-up table/catalogue that merges a qualitative evaluation of actions based on previous knowledge and experience, that will be complemented with ad hoc corrective measure proposals.
3. How to decide on the appropriate CM
 - MCSC to decide on the CM to be applied
 - Short list (RfCs) presented by SDAC MSD for decision by all NEMOs and TSOs; evidence of performance gain needed; evidence of adequate performance is achieved.
 - For anticipated change: SDAC MSD presents a scenario taking in account also other options of performance improvement (HW, SW, operational timings...)
 - Action plan for implementation on different levels (SDAC, regional, local...)
4. How to apply a CM
 - Action plan
 - Public announcement
 - Duration and its possible extension
5. How to monitor the application
 - Monitoring on regular basis of the performance and other impacts
 - Report on application to be published
6. How to remove a CM (discontinuation)
 - Action plan for removal / substitution by other solution
 - Public announcement
 - Update of the report

b) Description of the process

Detection and diagnosis of the problem (How to start the performance restoration process)

UNANTICIPATED DEGRADATION OF PERFORMANCE

Art.12: *In case all NEMOs detect an unanticipated degradation of the algorithms' performance below the thresholds referred to in Article 3(4) of Annex 3 and/or Article 3(3) of Annex 4, due to an overall effective usage higher than the usage range, in accordance with Article 3(2) of Annex 3 and Article 3(2) of Annex 4, all NEMOs in cooperation with all TSOs may decide to apply specific corrective measures with the aim to maintain an adequate performance of the SDAC and/or SIDC algorithms.*

- In case there is performance degradation (TTFS increases above the so far observed maximum), an analysis is performed by the provider **ASAP (according to the legal terms)**, to identify the causes and assess if the situation may repeat in the future
- If possible, the provider proposes also the solution to restore the performance (e.g. fix release, alpha release, parameters changes, apply algorithm special configuration on default algorithm usage)
- As for the degradation:

- Based on the provider's analysis, SDAC MSD prepares within 5 working days from its reception a report for MCSC to assess provider's proposition and propose additional performance restoration measures, i.e. corrective measures, selecting either in the existing catalogue, either adding corrective measures proposed ad hoc
 - For each proposed solution a description is provided, together with:
 - The expected performance gain is indicated, based on at least minimum evidence
 - The implementation lead time is specified (both for fix release and CM, or other solution)
 - Other impacts are also identified (impacts on NEMOs and TSOs systems, ...)

ANTICIPATED DEGRADATION OF PERFORMANCE

AM, art.12: (..) Corrective measures shall be applied also in cases when the algorithms' performance is expected to be degraded by a request for change, which cannot be rejected or postponed, in accordance with Article 19(2).

In case the algorithm's performance is expected to be degraded by a RfC, it shall first evaluate if the RfC cannot be postponed or rejected. If the RfC cannot be postponed or rejected, these expectations shall be based on anticipated usage scenarios, SDAC MSD prepares for MCSC a proposition of different implementation scenarios (at least 3). This scenario shall consider different sources of performance improvements: HW update, SW, modification of operational timings, application of CMs,...

For each proposed solution a description is provided, together with:

- The expected performance gain is indicated, based on evidence and measured using the AMM indicators which can be complemented when other indicators defined ad-hoc for the proper diagnosis of the gain.
- The implementation lead time is specified (both for fix release and CM, or other solution)
- Other impacts are also identified (impacts on NEMOs and TSOs systems, ...)

The report presents also the respective pros and cons.

How to identify the possible CM

A list (a catalogue) of possible corrective measures compliant with the AM art 12 is elaborated under the lead of SDAC MSD. This catalogue:

- Shall provide a qualitative evaluation of concrete actions for application of corrective measures, based on previous knowledge and experience.
- Shall be complemented with ad hoc corrective measure proposals.
- Shall be updated on regular basis, following a proposition of a party/ parties or following a SDAC MSD review. At least one a year it will be checked in SDAC MSD whether new propositions should be added or the existing ones should be updated...

In the catalogue, the corrective measure is described as much as possible detailed at least in following categories:

- Description of the measure
- Description of how to proceed
- Expected gain in performance (an estimation – as a simulation is not necessarily performed)
- Implementation lead time
- Impact on central assets
- Impact on NEMOs and TSOs
- Impact on market participants
- Number/share of BZ impacted

The initiator of the CM shall provide as much information as possible for the above-mentioned categories. The global overview and complements to those categories are the responsibility of SDAC MSD, with support of other entities if needed (provider, dedicated PCR groups or TSO groups...).

The catalogue is regularly updated, also with **ad hoc measures** proposed e.g. by the provider especially in the context of an unanticipated performance degradation.

How to decide whether a CM shall be applied to restore the performance

UNANTICIPATED DEGRADATION OF PERFORMANCE

Based on the report provided by PCR MSD and SDAC MSD, the solution is to be chosen by MCSC according to the gravity of degradation (important, very important, critical), following also the properties of corrective measures:

- The more degradation is observed, the faster to implement corrective measures should be considered as more relevant ones: i.e. if the degradation is at least classified as „important“ a CM could be implemented earlier than a fix release, a CM shall be privileged

Based on the MCSC operational decision on the appropriate solution, an action plan is established by SDAC MSD within 5 working days. All Parties engage to perform with higher priority all actions needed to timely implement the solution, ie the CM. In case enduring solutions for the solutions take a longer time to develop a phased approach with at least one adequate interim measure will be applied in order to overcome the interim phase.

The propositions of CM have to be transformed by SDAC MSD into RfC in accordance with Art.13. Any NEMO(s) and/or TSO(s) may also initiate a CM proposal by submitting a to all NEMOs an RfC. The CM proposition includes also the proposed implementation date. For the unanticipated degradation, the aim would be to implement the CM as soon as possible (following the RfC of type II process).

ANTICIPATED DEGRADATION OF PERFORMANCE

Based on the implementation scenarios provided by PCR MSD and SDAC MSD, the solution is to be chosen by MCSC.

Based on the MCSC operational decision on the appropriate solution, an action plan is established by SDAC MSD s. Parties engage to perform all actions needed to timely implement the solution, ie the CM.

The propositions of CM that have been decided upon by the MCSC have to be transformed by SDAC MSD into RfC in accordance with Art.13. Any NEMO(s) and/or TSO(s) may also initiate a CM proposal by submitting a to all NEMOs an RfC. The CM proposition includes also the proposed implementation date.

How to apply a CM

After the decision of the All NEMOs in cooperation with all TSOs (i.e MCSC), the RfC has to be processed. The action plan shall be followed in SDAC OPSCOM. For the actions to be performed by parties (e.g. adaptation of the local system, communication towards market participants...), the parties shall confirm in SDAC OPSCOM on regular basis if the work progresses and alert in case of risk of delay or any other obstacle that would prevent from timely and correct implementation of the decided CM.

Public announcement (art. 12(12)): All NEMOs shall announce publicly any introduction or discontinuation of a corrective measure **at least seven calendar days before its introduction or discontinuation** and maintain an up-to-date publicly accessible list of currently applied corrective measures.

Duration (art.12(4),(5)): The application of a corrective measure shall be limited to **eight months**. If the algorithm performance cannot be restored within this deadline as referred to in paragraph (4), all NEMOs shall address problems related to algorithm performance by developing a proposal for amendment of this Algorithm methodology or the Terms and conditions on SDAC products and submit it by expiry of the deadline above (eight months). The application of corrective measures shall, in such case, be extended until the algorithm performance can be restored pursuant to amended Algorithm methodology.

It's the interpretation of this procedure to consider that, AM articles AM 12(4) and 12(5) shall be applying not only to unanticipated performance degradation, but also to the case in which performance degradation comes from a legally-binding-RfC (anticipated degradation of performance).

From practical point of view, the 8 months limit:

- Unanticipated performance degradation in production, the eight months period will start counting since the application of corrective measure in production.
- For the legally binding RfCs (anticipated performance degradation), it is interpreted in this procedure that the eight months period starts counting at the moment of the go-live of the legally binding RfC. This is required for allowing enough time to explore and implement a long-term solution to the performance degradation.

How to monitor the CM application

During the time when the CM is being applied, its impact on algorithm's performance shall be monitored on regular basis and the results presented to SDAC OPSCOM and any other involved entities (SDAC MSD, PCR MSD, ...). Once a week, the results shall be analysed, to assess whether the CM is efficient, if there is a possibility of removal or improvement of the CM in place or any other next action that can deliver adequate performance with less impact on the market. Other indicators shall also be monitored.

Every month, based on recommendation of SDAC MSD, MCSC shall assess what will be the likely outcome after the 8 months deadline, and take appropriate steps in order to prepare it.

Report on application: *four weeks after the introduction* of a corrective measure, all NEMOs shall publish a report indicating the corrective measure(s) applied and the reasons for applying it/them (art.12(13)).

How to remove a CM

If a CM can be removed, it shall be done as soon as possible. A reasonable rollback period, meaning re-introducing the corrective measure, shall be foreseen.

There are different situations when MCSC decides to remove a CM (the list is not exhaustive):

- a long-term solution for scalability is found respecting the 8 months time slot (1),
- the corrective measure reveals as not needed anymore (2),
- the AM or the Terms and conditions on SDAC products have been amended(3).

The removal is decided by MCSC following a report with recommendations and options prepared by SDAC MSD, based on evidence of impact on performance and including a roadmap and action plan. The latter cover actions need on all levels (SDAC, parties, market participants...) and take in account different possible constraints (implementation lead times, ...). Once the decision and the plan voted, parties engage to perform all actions needed to timely implement this action plan.

All the decisions on removal of CM shall be based on evidence of performance simulations and performance monitoring for a **reasonable period**.

1. For the first case (another solution for scalability developed), all NEMOs in cooperation with all TSOs in SDAC MSD shall evaluate and decide based on the evidence of the impact on algorithm's performance if this solution can be accepted for implementation. If yes, once this solution is implemented, the CM can be removed. An action plan for the implementation of the solution and for the removal of the CM has to be approved by MCSC (with still respecting the 8 months delay).
2. For the second case, the corrective measure may be finally considered as not needed, as e.g. the market participants behaviour is finally different from what was expected and even without the CM, the initial performance would not be degraded. Such a decision must be based on corresponding simulations. A rollback period of reasonable time has to be foreseen. This approach is also to be applied if a less impacting CM is to be applied instead, because finally less performance gain is needed – and the new CM being less affecting the usual market coupling conditions.
3. For the third case, the initially temporary measure would become a permanent requirement, being reflected in methodology/ terms and conditions. Such a decision shall be based on performance improvement evidence as well as on analysis of other impacts that has the introduction of this CM. An action plan also needs to be defined to reflect it. Parties engage to perform all actions needed to timely implement this action plan.

Update of the report after the discontinuation (art. 12(13)): After the discontinuation of a corrective measure, the report shall be updated with additional information on the future measures planned by all NEMOs to address the problems that have caused the application of a corrective measure.

Public announcement (art. 12(12)): All NEMOs shall announce publicly any discontinuation of a corrective measure **at least seven calendar days before its discontinuation at least seven calendar days before its introduction or discontinuation**.

Check list once CM is into production and how to anticipate the next steps

This part presents some hypothesis on how the application of CM and the situation in production could look – as for instance no CM has ever been applied in SDAC so there are no lessons learnt. The aim is to check that they are reflected in the text of the CCP through appropriate procedure recommendation.

ONCE THE CM IS APPLIED = GOES LIVE

1. **Monitor closely especially in first weeks / months** (time extension to be decided by SDAC OPSCOM by go live of the CM)
 - a. **Gather performance and other impact data in order to assess the efficiency of the CM and decide the next steps**
 - i. **Performance:**
 1. Improvement covers the need: tends towards the option of maintaining the CM 8 months, while a more robust enduring solution is still being looked for / prepared
 2. Improvement covers the need but with only a small room in case the computations slow down due to unexpected issues: continue to explore other fast solutions, eg adding of a complementary CM; in parallel a more robust enduring solution is still being looked for / prepared
 3. Improvement does not cover the need: a complementary measure needs to be implemented fast

ii. **Other indicators: welfare, changes in MP behaviour (usage of products...)**

- b. **Perform simulation with the (recent) production data** coming from the period since the CM was implemented (simulate the impact of different CM,...)

2. Add a CM on the top of an already running CM (before the 8 months expiry)

- This would be an unanticipated degradation case, so CM needs to be treated fast: it is a **type II RfC**, so the correspondent process needs to be followed

ANTICIPATE THE 8 MONTHS DEADLINE

The end of 8 months period is the legal deadline defined in AM. That is why the next steps need to be anticipated enough in advance. It means that the time for the assessment of the application of the CM is very /too short: i.e. a decision for the period after 8 months shall be taken may be somewhere in between, which leaves only about 4 months to evaluation. This is likely too short to take into account effects like seasonal behavior, or even know if market participant adopted a new behaviour or are still in the process of developing a new one for adapting to the new situation.

1. After the 8 months – situation 1: Removal

- After the reasonable amount of time simulation show that the corrective measure is not anymore needed, and shall be removed. E.g. MP's behaviour is finally different from what was expected, so the impact on performance is lower or another solution to improve the performance was found (HW, SW improvement...)
- Performance simulation shall be realized to prove on the relevant data (reasonable long time since beginning of the application of the CM) that even without it the performance would have been adequate wrt operational procedures
- An action plan is to be prepared to guarantee the realization of all necessary steps

2. After the 8 months – situation 2: Chaining – removal of one CM, start of another one or extension of the existing CM

- It's the interpretation of this procedure to consider that the new CM being applied is another reaction to the anticipated degradation of performance (e.g. either we apply a stronger CM, either a weaker, either the same strength – according the updated information which is available on the performance and MP behaviour)
- Such decision is to be based on the evidence of performance observation / projection
- For the application of the new (next) CM, the same process as for the initial one needs to be followed (ie anticipated performance degradation)
- An extension in time of an existing CM shall be only applied when no other solution has been found and current CM in place is still most effective and appropriate measure to take, the amendment of regulatory documents is in progress but not yet decided upon, or there exist a change in the algorithms that will result in removal of CM, but which requires a few additional time to be completed and deployed in production.
- An action plan is to be prepared to guarantee the realization of all necessary steps

3. After the 8 months – situation 3: Amendment of documents in order to make the change permanent

- Based on evidence of performance and other impacts, MCSC decides to make the change permanent, i.e., modify the Algorithm methodology or the terms and conditions of SDAC products
 - i. As stated in AM 12(5) the proposal for amendment shall be submitted by the expiry of the eight months deadline.
 - ii. Until a decision is taken on the proposal of amendment, the corrective measures shall be extended until the performance is restored according to the amended version of documents is approved in an ACER decision.
- This decision needs to be validated a reasonable amount of time before the 8 months expiry. The amendment of the texts has to be triggered before the expiry, so that the CM application can be prolonged until the texts are changed. Thus, the CM becomes the „new normal “.
- An action plan is to be prepared to guarantee the realization of all necessary steps.