

Proposal for a simplified and strengthened Master Planning approach

Action Paper

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Abstract

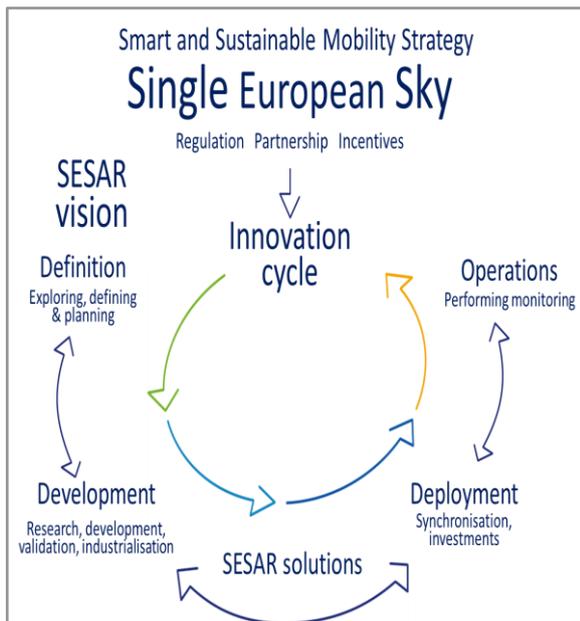
To support effective decision-making by the SESAR 3 JU Governing Board, this Action Paper aims at summarising the main recommendations on the future Master Planning approach and associated process.

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1 Background

The European Air Traffic Management (ATM) Master Plan (MP) is the agreed roadmap that defines the development and deployment priorities needed to deliver the Single European Sky ATM Research (SESAR) vision, which aims at achieving the Digital European Sky. The MP is therefore an essential steering instrument of the technological pillar of the Single European Sky (SES).



The MP defines the SESAR project as a whole and the SESAR 3 Joint Undertaking (SESAR 3 JU) is responsible for coordinating the tasks associated with it (called the “definition phase” of the SESAR project), namely monitoring the implementation of the SESAR project and amending, where necessary, the MP. The SESAR 3 JU executes this task with the support of its members and by consulting all European ATM stakeholders.

The MP defines the vision and the objectives of the SESAR project, ensuring that priorities and commitments made for both SESAR development and deployment activities (covering both industrialisation and implementation) remain strongly connected to EU policy priorities, as shown in the figure.

It is therefore the key strategic instrument used in SESAR to guide both public and private stakeholder decision makers whether for investment or for regulation.

The current MP is structured in three “levels”:

Level 1 (updated every 3-4 years through major update campaigns): provides the executive top-level plan for the evolution of ATM in Europe for public as well as private stakeholders. It defines the SESAR vision for the Digital European Sky and the priorities to deliver it. Level 1 takes the form of a publication, which is updated when a major update is requested by the SESAR 3 JU Governing Board due to for example (but not limited to) changes in operational needs, policy priorities or major changes stemming from SESAR development or deployment activities.

Level 2 (updated on an annual basis): provides the planning view of SESAR development activities. It is updated and released once every year. The content directly correlates to the work programme of the JU. Level 2 takes the form of a database that is consulted mainly by technical experts via a website.

Level 3 (updated on an annual basis): provides the planning view for SESAR deployment activities. It is currently updated every year taking into account results from the work programme of the JU (e.g. solutions reaching maturity), regulatory developments (e.g. common projects), the SESAR Deployment Programme and the reported progress of implementation across Europe. Level 3 takes the form of a publication that is published every year on the JU website. It constitutes the basis for the annual reporting cycles at national level fed to and consolidated by Eurocontrol (via the so-called

“LSSIP+” process) which now also takes into account monitoring reports developed together with the SESAR Deployment Manager (SDM) in particular with respect to the Common Project One (CP1).

Following an extensive “lessons learned” exercise conducted within the JU’s governance¹, the JU was tasked to revert to the Governing Board with recommendations on how best to **strengthen** and **simplify** the Master Planning process. The JU conducted a strengths, weaknesses, opportunities, and threats analysis (SWOT)² together with all major stakeholders, which is summarised below.

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> • The only official European plan connecting definition, development and deployment of innovative solutions • Not just a paper exercise, structuring to drive SESAR private & public investment priorities and ensure alignment with EU policy priorities • Supported by the entire civil & military aviation community and Member States • Updated to reflect new technology breakthroughs, evolving aviation expectations, and evolutions in EU policy and economy adjusting to emerging challenges within ATM • Connected to global planning documents (ICAO) 	<ul style="list-style-type: none"> • Readability for and use by decision makers. Including the usability of levels 2 & 3 need to be improved to enable more “executive” progress monitoring. • Process is perceived as complicated and difficult to understand due to multiple dependent & supporting plans. The buy-in from Member States in particular should be improved (*) • Difficulty to manage the impacts of perceived moving targets impacting on timescales, expected performance contribution to EU-wide performance targets, and the supporting regulatory framework(*) 	<ul style="list-style-type: none"> • Stronger link with the Single European Sky policy & strategic planning at EU level with a closer connection to other policies and initiatives affecting SESAR (e.g. in the Space domain and environment) • Stronger focus on industrialization activities, on-boarding of new entrants (e.g. drones) 	<ul style="list-style-type: none"> • Risk of miss-alignment between long term vision and short-medium term plans for the SESAR Development & Deployment phases

This Action Paper aims at summarising how the SESAR 3 JU will comply with its regulatory obligations in relation to the MP and the associated process taking into account lessons learned from previous SESAR programmes and the new legal framework establishing the SESAR 3 JU. A high level description of the proposed new process, which addresses guidance for developing its content, a new structure of the MP and the criteria and steps for triggering updates of the MP and for their approval, is outlined in Appendix A of this document.

¹ The consultation, which was conducted prior to the establishment of the SESAR 3 JU, resulted in the Master Planning Committee (MPC) Action Plan and was supported by all stakeholders of the JU. It is available upon request. Please contact agnieszka.byrt@sesarju.eu to receive your copy.

² In the table items marked with (*) are weaknesses that also relate to findings identified in audits and evaluations from the European Commission Internal Audit Service and other external audits from the Union

All recommendations contained in this paper have been cross-checked extensively against the current regulatory framework applicable to the JU and the broader SES context. They are fully compliant and by large hold the promise to generate a better impact from regulatory provisions already in force today notably in relation to the coordination by the JU of the tasks of the SESAR definition phase and associated monitoring the implementation of the SESAR project as a whole.

2 How to simplify the Master Planning approach

The simplification of the Master Planning approach is based mainly on streamlining the three main MP activities (i.e. MP update, planning and monitoring of development, planning and monitoring of deployment) which will lead to clear distinction between the strategic and execution layer as described in Appendix A. This will result in more clear and transparent workflows and fit-for-purpose outputs to the SESAR 3 JU Governing Board. For the executive and decision makers it means streamlining of decision making on the MP, i.e. there will be only one strategic MP (instead of three levels and several detailed technical documents). Additionally, decision makers will benefit from annual high-level monitoring reports on status and progress of development and deployment activities in relation to the MP vision, aiming at achieving the Digital European Sky.

2.1 Lift content up to focus on defining a stable strategic framework for the execution of the SESAR project

Today	Tomorrow
<p>Currently, the MP is targeting a wide audience covering both decision makers (L1 – strategic view) and experts (L2 and L3 – technical view), without fully satisfying either.</p>	<p>The scope of the MP will be lifted up to become a more strategic steering tool focusing on the “why we need to act” (link to policy and performance ambitions), “what needs to be done” (vision with a clear sense of priorities) and “by when” (high-level roll-out to achieve the vision).</p> <p>The Master Plan and its monitoring will be tailored to the needs of the policy- and executive-level audience of public (including Member States) and private decision makers only.</p> <p>Consistent input by stakeholders needs will be ensured along the consultation process(es) now associating more strongly also consultative arrangements put in place in the context of SESAR deployment governance.</p> <p>Technical details on how the MP is being implemented will be described in other documents (not as part of the MP process) under the coordination of each entity contributing to the execution of the SESAR project (e.g. the work programmes of the JU, SDM, Eurocontrol, EASA and EUROCAE) with a clear link to the MP where and when appropriate (as the domains of competence of e.g. Eurocontrol, EASA and EUROCAE are permanent and broader than the</p>

	<p>scope of SESAR). The interface between the strategic (MP update) and executive (annual planning and monitoring of development and deployment) layer will be ensured through the Technical Coordination Group (<i>see point 3.6 and Figure 1 in Appendix A</i>).</p> <p>As a result of this change the outputs of the new approach, i.e. updated MP, annual monitoring reports for development and deployment, will become fit-for-purpose and more simple, transparent and “digestible” for the decision makers (<i>see Appendix A</i>).</p>
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2.2 Discontinue the three-level approach

Today	Tomorrow
<p>Currently, the content of the Master Plan is organised into three levels: L1 – the executive view, L2 - the planning view for SESAR development activities and L3 - the planning view for SESAR deployment activities.</p> <p>Formally every proposal to modify the ATM MP (consisting of 3 levels) needs to be approved in principle by the SESAR 3 JU Governing Board. The position of the European Union in the Administrative Board as regards decisions concerning significant modifications of the ATM Master Plan had to be adopted by the European Commission by means of implementing acts after seeking the opinion of Member States through the Single Sky Committee.³</p> <p>However, in practice mainly changes to Level 1 were approved while the annual updates of Level 2 and 3 were not systematically approved.</p> <p>This was considered necessary by the European Commission in order to avoid overloading the</p>	<p>There will be only one strategic ATM Master Plan and its update will be triggered by the SESAR 3 JU Governing Board only in case a of significant changes, i.e. changes affecting either the overall context of the SESAR project (e.g. important change in policy orientation, economic context) or critical risk, issues or opportunities arising from SESAR development of deployment activities.</p> <p>MP L2 and MP L3 will be discontinued and replaced by strategic planning and monitoring processes linked to the execution of both development and deployment activities (<i>please see Appendix A for further details</i>).</p> <p>According to the Single Basic Act establishing the SESAR 3 JU, the Commission shall adopt implementing acts with the view to establishing the position of the Union concerning the amendment of the European ATM Master Plan.⁴ This change will therefore enter in effect with</p>

³ Article 6(4) of the Council Regulation (EC) No 219/2007 of 27 February 2007 on the establishment of a Joint Undertaking to develop the new generation European air traffic management system (SESAR) as amended by Council Regulation (EC) No 1361/2008 of 16 December 2008 and Council Regulation (EU) No 721/2014 of 16 June 2014.

⁴ Article 155(1) of the Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014 (“Single Basic Act”).

Board, the College and Member States with often very technical modifications that did not necessarily require the attention of decision-makers (both public and private).

There is a risk that too frequent changes to the MP would give an impression of “moving targets impacting” on timescales, priorities etc., which could destabilise the execution of the SESAR project.

the adoption of a new version of the MP by the GB.

2.3 Distinguish clearly between outputs for the Governing Board that are “for decision” (update of the MP) and “for information” (annual monitoring)

Today	Tomorrow
<p>The MP levels 2 and 3 produce outputs (in the form of plans, reports) on an annual cycle (for Levels 2 and 3), in addition to major MP update campaigns.</p> <p>Due to the nature of the three levels of the MP, the current process does not provide a mechanism to formally separate what is for “decision” and what is for “information only”.</p> <p>As the levels 2 and 3 are frequently updated for technical details and alignment (that do not necessarily change the overall priorities for ATM modernisation in Europe), these constitute a change of the MP and therefore would require formal consideration by the SESAR 3 JU Governing Board and trigger unnecessary formal consultation processes.</p>	<p>The SESAR 3 JU Governing Board members will benefit from a reduced administrative burden as formal approvals for changes to the MP will be limited to pluri-annual update campaigns (typically every 3-4 years) as requested by the Governing Board on the basis of the significant change as described in point 2.2. This will enable a full synchronisation of formal consultation cycles between the European Commission, Eurocontrol and private representatives at the Governing Board (<i>see Figure 6 in Appendix B</i>) while providing a stable strategic direction of European ATM modernisation for all actors concerned.</p> <p>In addition, in order to avoid any misalignment between strategy and execution, Governing Board members will be provided (for information) on an annual basis with information showing the strategic alignment of SESAR development and deployment activities towards the strategic vision and direction outlined in the MP in a format that can also be used to stimulate corrective actions where and when appropriate.</p>

3 How to strengthen the Master Planning approach

Strengthening the MP process will be realised by encouraging an accelerated market uptake according to the new SESAR 3 JU regulatory obligations, establishing stronger engagement of Member States by leveraging the role of the SRG and better aligning the strategy and execution layer for deployment with the creation of a Technical Coordination Group to boost cooperation between the main entities contributing at European level to the execution of SESAR deployment activities.

To ensure that the MP provides the maximum level of stability and minimize the risk of being perceived like a “moving target” (as noted by auditors in the past), the processes and interaction between different layers and actors will be more clear, transparent and well documented.

3.1 Ensure a stronger and more unified alignment between development and deployment activities (now also including industrialisation)

Today	Tomorrow
<p>The coupling between SESAR development and deployment was historically addressed in the maintenance of level 2 and 3 of the MP. This has relied largely on the long established Eurocontrol (ESSIP) and (LSSIP) processes.</p> <p>However, since 2014 with the adoption of the Pilot Common Project regulation which marked the start of the SESAR deployment phase (covering both industrialisation and implementation), the number of actors involved in SESAR deployment has increased significantly, adding additional layers of EU coordination outside of the governance of the JU (e.g. at the level of the SESAR DM for implementation but also EASA and EUROCAE in particular in relation to industrialisation).</p>	<p>The future MP approach will provide the strategic framework for all actors involved in the execution of the SESAR project.</p> <p>By staying only at strategic level (i.e. without having annual updates of levels 2 and 3), the new process will enable a stronger and more stable connection with the various programmes managed by all actors concerned with the successful execution of the project (i.e. independently of who is in charge of coordinating the activities, JU or other actors). This in turn should enable e.g. SESAR 3 JU, Eurocontrol, the SDM, EASA and EUROCAE to align their various planning and reporting cycles on the execution of objectives defined in the MP and capture respective synergies, while avoiding duplication of work and unnecessary redundancies and overlaps with the MP process.</p> <p>There will be a clear delimitation of development and deployment activities according to the technology readiness level (TRL) of the innovation concerned. Development activities will range from TRLO to TRL6 and deployment from TRL7 to TRL9 (including industrialisation and implementation). SESAR 3 JU activities such as Fast-track and DSDs are geared at contributing to accelerate market uptake , therefore they are targeting TRL7/TRL8.</p>

3.2 Promote an accelerated market uptake by a critical mass of early movers

Today	Tomorrow
<p>Traditionally the MP focused on defining top-down deployment objectives for activities that need to be coordinated at EU level (e.g. essential operational changes that were included in common projects).</p> <p>The time between a technology becoming mature for deployment and an actual decision to deploy an innovation across Europe in the form of a mandate and the actual deployment can take several years.</p> <p>There is no distinction in the MP between deployment objectives that are “voluntary” (e.g. when the technology is deployed at local level by early movers) and “mandated/coordinated” (e.g. synchronised deployment at EU level via a common project).</p>	<p>The MP will define strategic deployment objectives which can be implemented either voluntarily (locally by early movers) or mandatorily to reflect the decisions taken by regulators.</p> <p>Voluntary deployment objectives will be developed and agreed with stakeholders based on an optimal deployment scenario for Europe and an associated cost benefit analysis. They will not constitute an obligation or commitment to deploy at local or EU level but will provide a strategic basis to support investment decisions by early movers and secure that related industrialisation activities are adequately foreseen (when appropriate). To that end, and in close coordination with EASA they will also define the need for timely development by EASA of regulatory measures that fall under Regulation (EU) 2018/1139 and the relevant implementing rules.</p>

3.3 Focus on better strategic monitoring of the execution of development and deployment activities in relation to the vision for the Digital European Sky.

Today	Tomorrow
<p>Various reports on the execution of the MP are being produced and consolidated but not at a level that is sufficiently synthetic for decision makers (e.g. L3 plan and report of more than 150 pages each and technical annex of more than 400 pages).</p> <p>As a result, limited consolidated information has been provided to the Board on an annual basis on the execution of development and deployment activities towards the achievement of the vision defined in the MP.</p>	<p>Better strategic monitoring by the SESAR 3 JU Governing Board will be facilitated by the annual delivery of two executive-level reports (for information, not decision) showing progress achieved towards the achievement of the Digital European Sky. These reports will cover:</p> <ul style="list-style-type: none"> - Development: consolidating and integrating JU work programme delivery results in relation to the vision outlined in the MP (i.e. single source of reporting is the JU). - Deployment: consolidating and integrating progress in deployment (covering both industrialisation and implementation) in relation

to the vision outlined in the MP consolidating progress as reported across all entities associated with the roll-out of SESAR).

See Figure 3 and 4 in the Appendix A.

3.4 Provide an outlook of the anticipated network performance impact that can be achieved by implementing the Digital European Sky

Today	Tomorrow
<p>There is a high-level alignment between the MP performance ambition and associated roll-out plan for the execution of the project, however this coupling is not based on a systematic network performance impact assessment as was done, for example, in the context of the Airspace Architecture Study⁵.</p> <p>This leads to a relatively high level of uncertainty attached to meeting the performance ambition defined in the MP or when deciding on certain investment priorities.</p> <p>Also the coupling with the SES Performance Scheme could be improved as most of the SES high-level performance objectives can only be achieved through the timely implementation of the MP.</p>	<p>What was performed exceptionally in the context of the Airspace Architecture Study will become the new norm: the impact of technology and operational changes enabled by SESAR will be assessed systematically on an annual basis across the network through advanced and fully transparent simulation runs involving all stakeholders to make sure that the assumptions are as realistic and credible as possible.</p> <p>Based on a harmonised and consistent set of performance indicators this will enable more accurate forecasts and monitoring of the performance impact that can be expected to be enabled by SESAR investments at European and national level (when appropriate also at regional level). It will also allow for the optimal planning and monitoring of SESAR roll-out).</p> <p>Finally, this new annual assessment will also support better forecasts of SESAR-related investments in the context of the implementation of the SES Performance Scheme.</p>

⁵ More information @<https://www.sesarju.eu/node/3253>.

3.5 Establish stronger engagement with Member States

Today	Tomorrow
<p>Until the establishment of the SESAR 3 JU, Member States were not directly represented in the governance of the JU, which limited awareness and buy-in by Member States.</p>	<p>Before submission to the SESAR JU Governing Board of a MP update proposal by the Executive Director the involvement of Member States associated to Horizon Europe in the development of the proposal will be sought via the SESAR 3 JU States' Representatives Group (SRG).</p> <p>From a SES perspective, the position of the European Union in the Governing Board as regards to changes to the MP will continue to be adopted by the European Commission by means of implementing act after seeking the opinion of EU Member States through the SSC.</p> <p>The earlier and more comprehensive involvement of EU Member States representatives in the SESAR 3 JU governance should therefore also support more informed formal decision making by Member States in the Single Sky Committee (SSC).</p>

3.6 The establishment of a permanent Technical Coordination Group to boost cooperation with main entities contributing at European level to the execution of SESAR deployment activities

Today	Tomorrow
<p>The JU has been leveraging its programme management approach and cooperative arrangements to ensure technical coordination with in particular the SM, EASA and EUROCAE over the past years.</p> <p>However, until the establishment of the SESAR 3 JU, the JU had no regulatory obligation in relation to facilitating market deployment. This has now changed and developing and accelerating the market uptake of innovative solutions to establish the Single European Sky airspace as the most efficient and</p>	<p>Due to the large number of entities contributing at EU level to the execution of SESAR deployment activities, the creation of a Technical Coordination Group will help to mitigate the risk of misalignment between the long-term vision outlined in the MP and short-medium term plans for the execution of SESAR deployment activities. It will facilitate accelerated market uptake of SESAR Solutions when they are released from R&I (at TRL 6) by ensuring the involvement of the main actors (including the SDM Investors' Buy-in Group, ECTL NM NDTECH/NDOP, etc.).</p>

environmentally friendly sky to fly in the world is one of the SESAR 3 JU objectives stated in the regulation⁶.

The permanent Technical Coordination Group will be composed of the main entities contributing at EU level to the execution of SESAR deployment (SDM, SESAR 3 Joint Undertaking, Eurocontrol, EASA, EUROCAE and EDA).

The group will support the technical consultation processes and facilitate consensus building on “how” to best meet strategic deployment objectives defined in the MP and respective investment decisions across the EU Network.

The group will serve as a gateway and link between the strategy and execution layer of Master Planning (*see Figure 1 in Appendix A*).

A more detailed description of the proposed objectives, tasks and composition of the group can be found in Appendix B.

⁶ COUNCIL REGULATION (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe (OJEU – 30.11.2021), TITLE VIII - SINGLE EUROPEAN SKY ATM RESEARCH 3 JOINT UNDERTAKING, Art. 142, paragraph 1 (c).

4 Recommendations

Whereas:

- The Master Planning Process was reviewed as part of the scope of three audits/evaluations⁷ over the period from 2015 to 2017, where the auditors notably recommended, among others, *strengthen the “architecture” of the Master Plan to enable the Commission to streamline deployment planning and monitoring, reinforce the Master Plan update and reporting and improve coordination with the Deployment Manager with regard to Level 3 monitoring and reporting.*
- Further to the audit recommendations and the high-level process SWOT analysis, the MP Action Plan to simplify and strengthen the Master Plan Processes was developed by the SJU together with the EC. Following the stakeholders’ consultation under the coordination of the SESAR Joint Undertaking it was approved in November 2021.
- Understanding that a number of the proposed changes to the MP process can only be implemented through a structural update of the MP (e.g. structure in three levels, more strategic orientation, etc.) as illustrated below:



The SESAR 3 JU Governing Board is invited to consider the following recommendations:

1. Adopt the new MP approach and associated process, as described in this Action Paper.
2. The SESAR 3 JU shall provide to the Governing Board annual monitoring reports on the status and progress of SESAR development and deployment activities in relation to the vision for

⁷ Final evaluation of SESAR 1 and interim evaluation of S2020 (EC-2017), Performance audit of the Single European Sky (ECA-2017), Audit on operational governance and Master Plan update (IAS-2015)

Digital European Sky outlined in the MP and associated network performance impact (for information only).

3. The SESAR 3 JU shall make the necessary arrangements with the relevant organisations, such as the Deployment Manager, Eurocontrol, EASA, EUROCAE and EDA to ensure the broader involvement and buy-in of all JU members and stakeholders as specified in this Action Paper.

The SESAR 3 JU will document the new Master Planning approach and associated process and ensure full traceability and auditability in the JU's Quality Management System after the approach is agreed by the GB.

Appendix A Summary of the new MP approach & associated process

The new MP approach is based on three interconnected groups of activities (i.e. ATM MP update, planning and monitoring of development and deployment). The flows of connecting the different activities are aligned in function of the MP simplification and strengthening outlined in Chapter 2 and 3.

Figure 1 presents a helicopter view of the overall landscape. The three high level processes (i.e. overall process to update the MP, annual process to plan and monitor the development activities, annual process to plan and monitor the deployment activities) are further described below in this appendix.

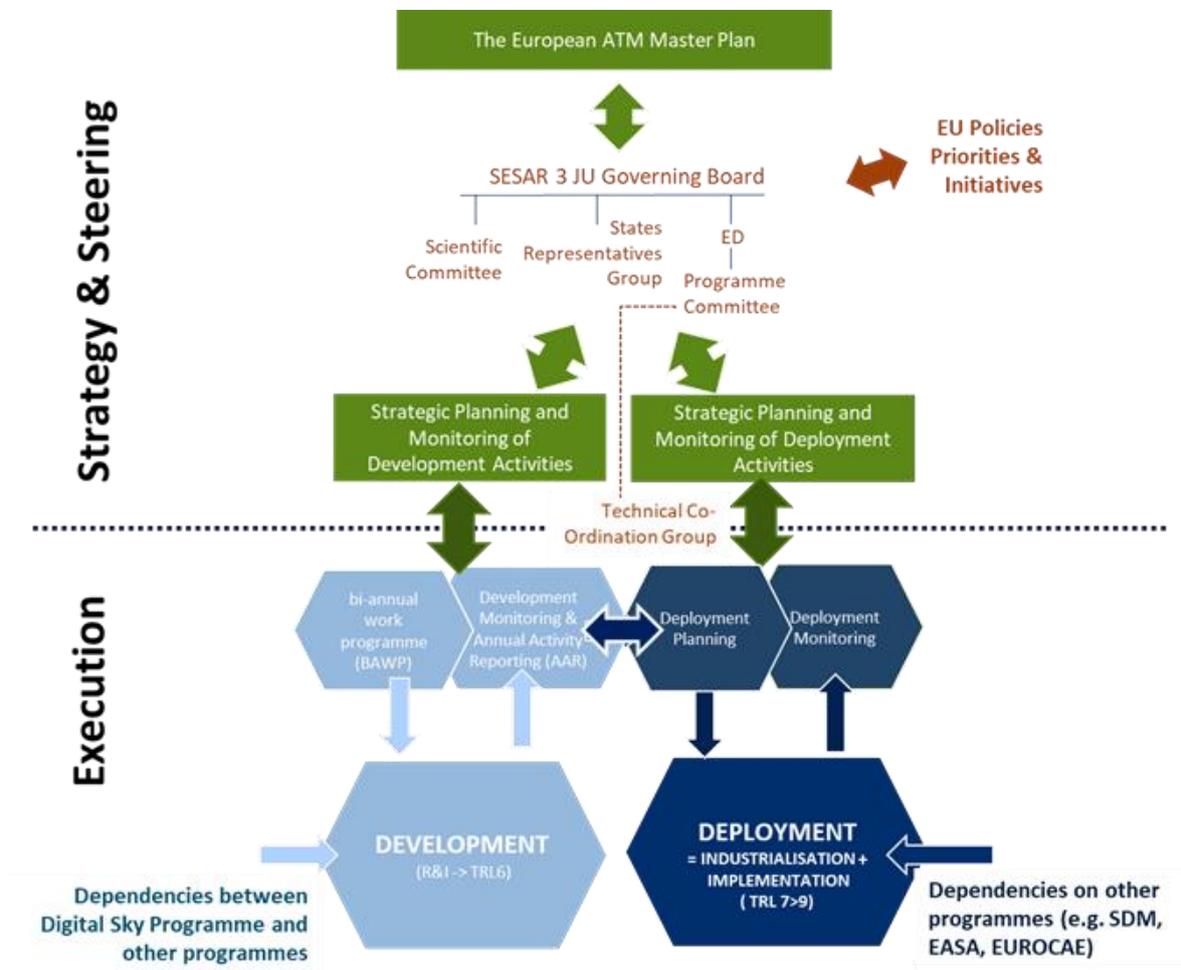


Figure 1 Landscape of high level domains that enable the Master Planning

Note that under “dependencies from other programmes” interactions with clean aviation (to ensure synergies and avoid redundancy) as well as potentially some other transports-related programmes like for example Europe’s Rail projects on multi-modality are also to be considered.

The strategy and steering layer



The MP targets all concerned stakeholders (both public and private). It defines the SESAR vision for the Digital European Sky and priorities needed to deliver it. The scope and details of the next MP will be changed in the sense that the content will focus only on the strategic steering, and, as such, will become an instrument for executives and policy makers.

As a consequence, the MP will no longer be decomposed in three levels (i.e. MP L1,L2,L3) so as to bring it as close to, and make it as comprehensible as possible for, the targeted group of decision makers. **There will be one strategic European ATM Master Plan** and the MP L2 and MP L3 will be replaced by activities

geared at establishing an interface to planning and content information processes that will monitor the execution of both development and deployment

The overall process to update the MP presented in Figure 2 can be briefly summarised in the following manner:

- The European ATM MP evolves in function of evolutions agreed at the level of the ICAO’s GANP while evolutions endorsed at the level of the European MP may feed the evolution of the GANP itself (i.e. two-way matching).
- The vision and strategy outlined in the actual version of the MP is monitored on a yearly basis and information is shared at the level of the GB. This monitoring is fed with information captured as part of the execution of both development as deployment. Bi-directional traceability between strategic monitoring and details from execution are to be guaranteed by the responsible entity dealing with the dedicated execution activity.
- The applicable version of the MP is subject to changes to policy objectives and priorities at the level of the EU. The decision to update the MP is at the discretion of the SESAR 3 JU GB only in case a of significant changes, i.e. changes affecting either the overall context of the SESAR project (e.g. important change in policy orientation, economic context) or critical risk, issues or opportunities arising from SESAR development of deployment activities. When doing this the GB agrees on the objectives of the campaign and its success criteria.
- The building of a new MP is supported by and steered with input from the Programme Committee and the States’ Representatives Group. The ED provides reporting on status and progress of the MP campaign project.
- To execute the campaign the ED relies on effort and resources provided via the dedicated transversal projects and any other contractual arrangements.

- The MP once updated and reviewed at working level is next tabled for formal consultation at EU level by the EC itself. This process finally results in the formal adoption of the new version of the MP by the GB.
- Once adoption is achieved, the updated MP is used as reference for any work at GANP level and any work related to the implementation of the MP.

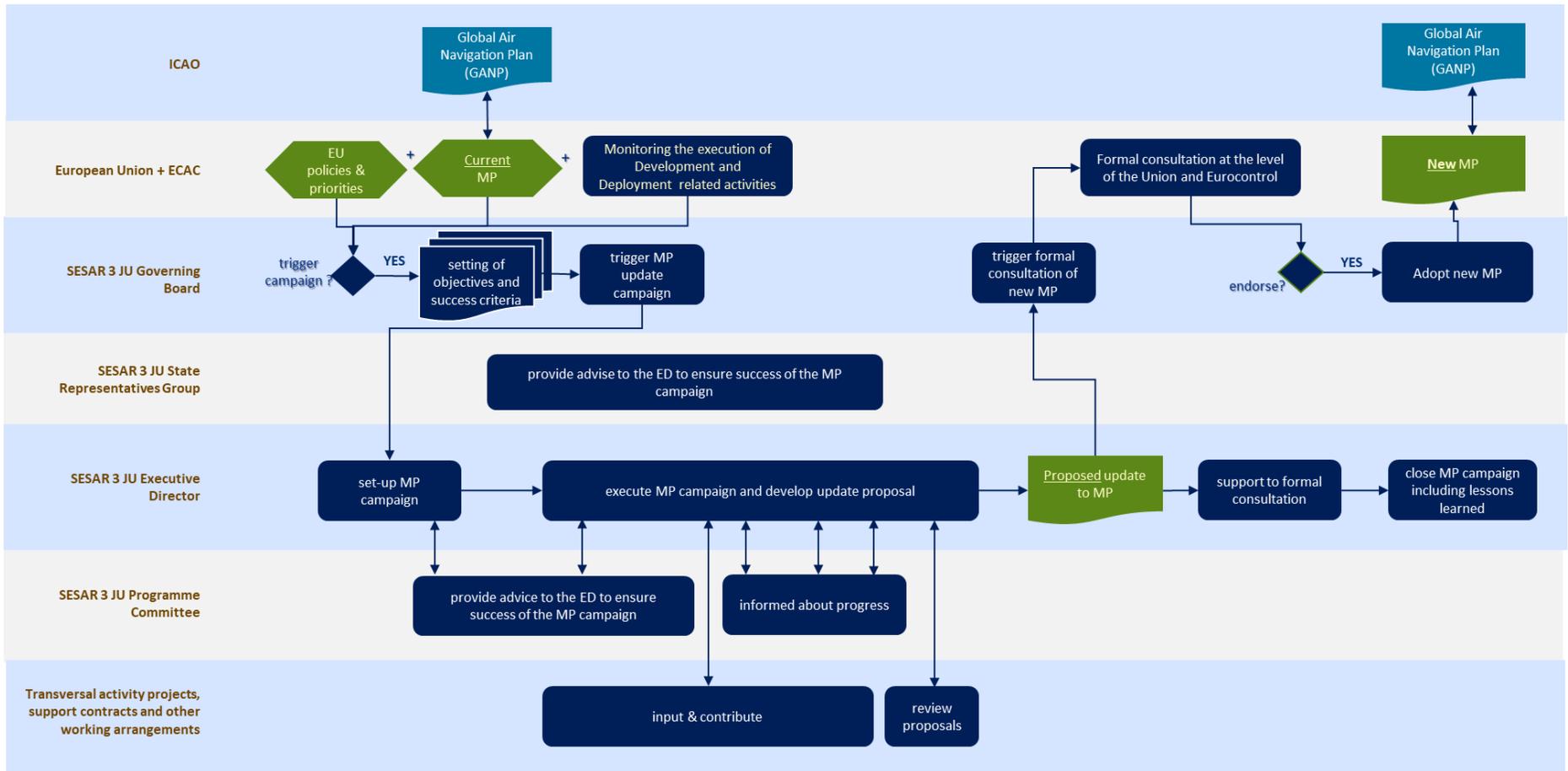
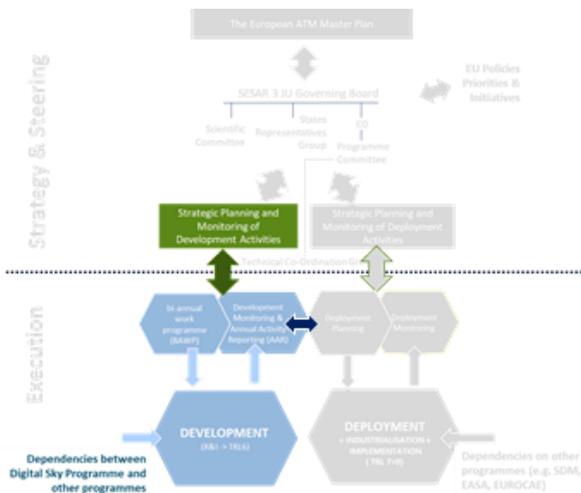


Figure 2 The strategy and steering layer – process to update the MP

The strategy and steering outlined in the endorsed MP will be monitored on a yearly basis via an executive monitoring report on the execution of development and deployment towards the vision outlined in the MP that will be distributed for information to the Governing Board.

The execution layer – Development planning and monitoring:



The MP will continue to define the priorities for development and is shaping the execution framework of the Digital European Sky programme.

Planning: the scope has been translated into a rolling work programme agreed and summarised in the SESAR 3 JU bi-annual work programme, which is updated every 2 years (BAWP). The BAWP itself should be read in conjunction with the SESAR 3 JU multiannual work programme (MAWP)⁸, which establishes the overall principles and framework under which the operations of the SESAR 3 JU are defined, planned and executed from 2021 to 2031.

Monitoring: the development execution is monitored on a yearly basis. It represents a review of the progress (actual and forecasted) of research and innovation described in the MP and its overall coverage up to and including TRL6⁹. It will highlight top risks, issues and opportunities in relation to the objectives defined in the MP.

The overall annual process to plan and monitor the development activities presented in Figure 3 is summarised in the following manner:

- The Master Plan defines the priorities for development and this is strongly coupled to the execution of the Digital Sky Programme (DES). To do this, the scope of the MP is translated into a work programme agreed and regularly updated as part of the SESAR 3 JU Bi-annual work programme (BAWP).
- The BAWP itself should be read in conjunction with the SESAR 3 JU multiannual work programme (MAWP) which establishes the overall principles and framework under which the operations of the SESAR 3 JU will be defined, planned and executed from 2021 to 2031.
- The work programme (BAWP) is implemented by the ED through open call(s) for proposals and call(s) for tenders. Once offers submitted in reply to call for tenders are evaluated and are concluded they are translated into grants.
- The ED is advised by the PC on programme alignment and progress in respect to the objectives set by the MP
- The monitoring of development activities against the strategic Master Plan are fed using the output captured by the DES programme and readiness of solutions is done by measuring maturity (TRL). Mature solutions are next delivered for further deployment. The monitoring of

⁸ <https://www.sesarju.eu/node/4106>

⁹ The execution of DSDs that are executed as part of DES touching upon TRL 7-8 maturity are feeding the monitoring of the deployment (i.e. industrialisation)

development activities will also be reported on as part of the SESAR 3 JU annual activity report (AAR).

- The strategic MP development monitoring will be shared at the level of the States' Representatives Group.
- The assessment of the strategic MP development monitoring may lead to corrective actions to be described via an amendment of the BAWP subject to endorsement by the GB.

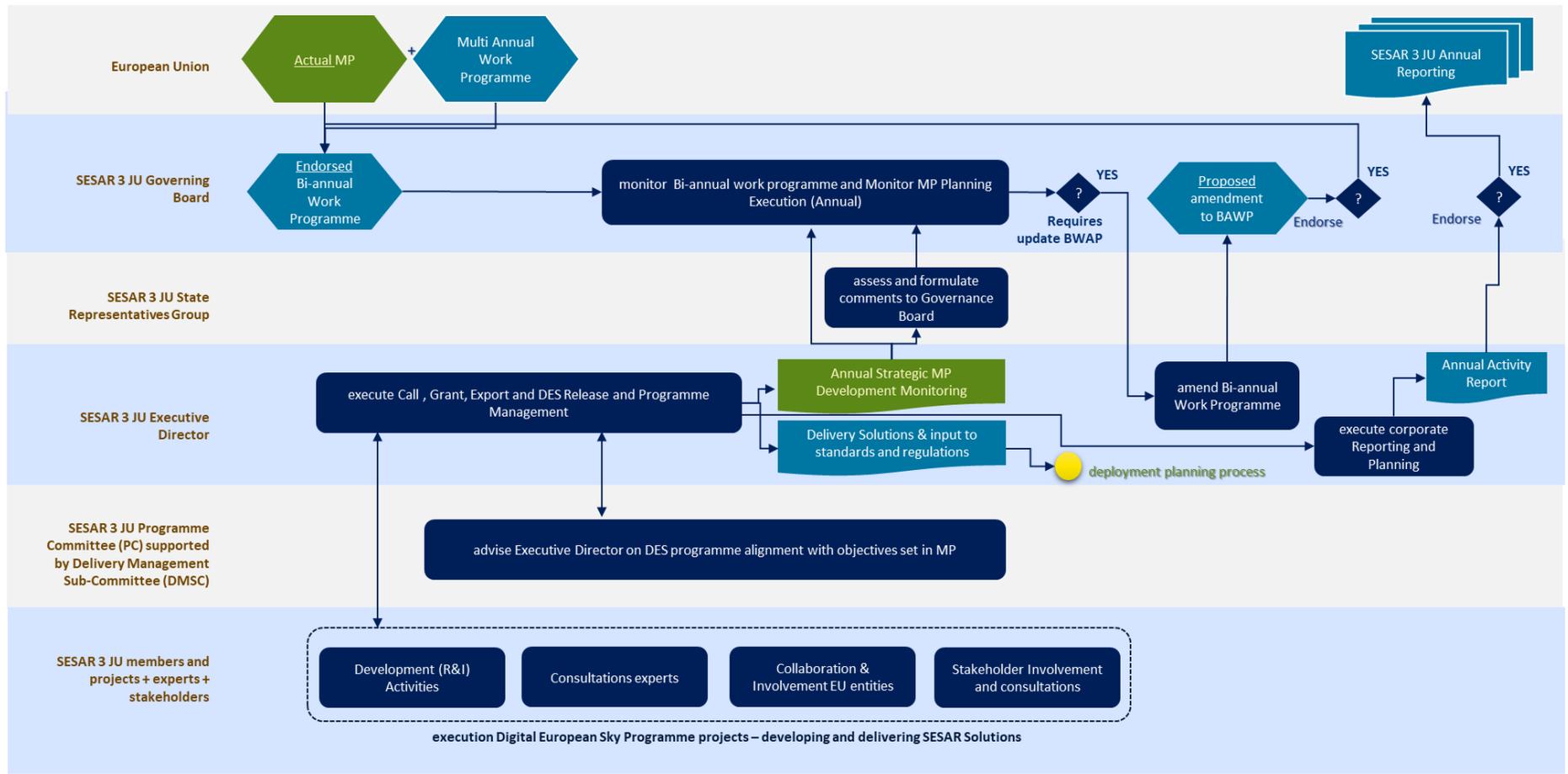
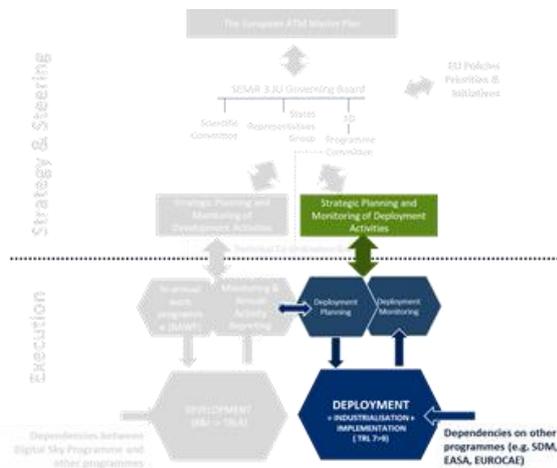


Figure 3 Master Plan Execution – Planning & Monitoring Development Activities

The execution layer – Deployment planning and monitoring:



Planning : in close coordination with all involved stakeholders and relevant other plans, the deployment planning will align the deployment sequence and priorities with the strategic priorities defined in the MP by defining strategic deployment objectives covering both industrialisation & implementation activities. A stronger connection between development and deployment will be put in place through the notion of strategic deployment objectives defined in the MP. These objectives will also aim at achieving the performance objectives of the Single European Sky programme and the policy objectives of the EU.

Monitoring: the alignment of deployment execution in line with the MP is monitored at strategic level on a yearly basis. The monitoring of both industrialisation and implementation will ensure that status and progress information is reported against the strategic objectives defined in the MP. This monitoring is fed by the deployment activities themselves and as such a bi-directional traceability is established between strategy and execution. This process will be executed in full coordination with the EU entities in charge of facilitating deployment. This monitoring will also rely on and integrate/consolidate reporting done by the States to EUROCONTROL (LSSIP+), reporting by the SDM, EASA and EUROCAE and other possible programmes or initiatives, e.g. the Network Strategy Plan/Network Operations Plan, PRB. It will connect with the LSSIP+ process to enable a unified planning and monitoring deployment process focused on the notion of strategic deployment objectives defined in the MP.

The annual process to plan and monitor the deployment activities presented in Figure 4 is summarised in the following manner:

- The Master Plan defines the strategic deployment objectives. The deployment is to consider activities in both industrialisation and implementation activities. For industrialisation activities the focus will be on the readiness of standards and regulatory/certification frameworks where and when appropriate.
- The GB will be informed of progress of both industrialisation and implementation activities. To do this, status and progress information is returned in function of the monitoring of the strategic objectives of the Master Plan. This information is consolidated by the SESAR 3 JU based on reporting made via the various entities involved in SESAR deployment.
- To support and enable the unified approach for deployment aligned with the strategic MP, the Technical Co-ordination Group supports the technical consultation processes and facilitate consensus building on “how” to best deploy objectives defined in the MP across the EU Network. It enables a joint assessment to ensure that a consistent approach of all operational stakeholders towards deployment is worked out.
- The deployment monitoring will rely on and integrate/consolidate reporting done by the States to Eurcontrol (LSSIP), reporting by SDM, EASA and EUROCAE and possible other programmes or initiatives, e.g. NSP/NOP.
- The States’ Representatives Group will be informed about the status of SESAR deployment.

- The GB is informed about the deployment execution in function of the Master Plan on an annual basis.
- The assessment of the strategic MP deployment monitoring may lead to correctly actions to be described via amendment(s) of the BAWP and the BAWP is subject to endorsement by the GB.

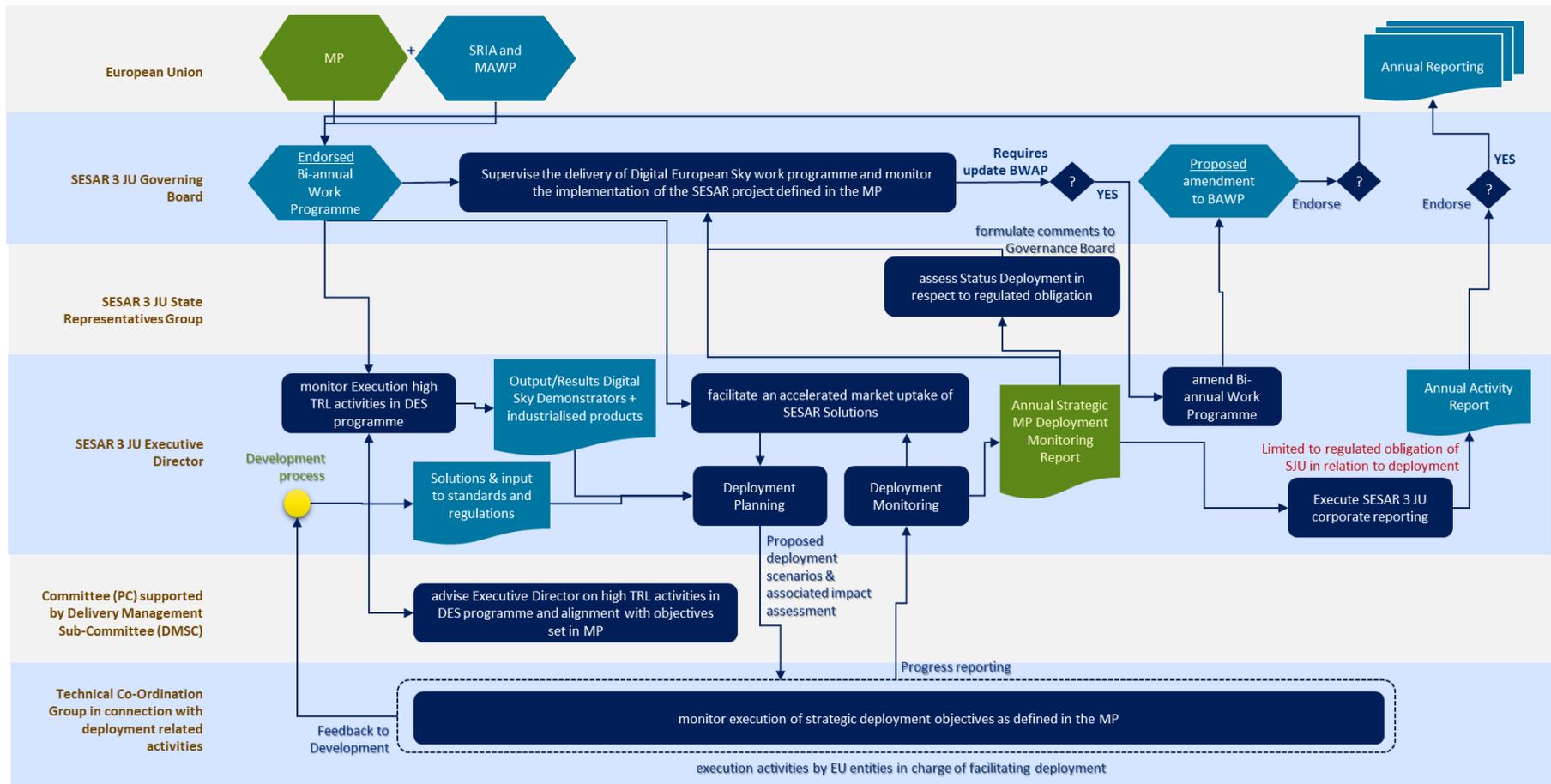


Figure 4 Master Plan Execution – Planning & Monitoring Deployment Activities

Appendix B Stakeholder consultation and coordination beyond the SESAR 3 JU governance to better connect development and deployment activities

As shown by the figure below, there will be two types of stakeholder consultations beyond the governance of the SESAR 3 JU to better connect development and deployment activities:

- On a yearly basis to boost cooperation with the main entities contributing at EU level to the execution of SESAR deployment activities and help accelerate market uptake
- During a MP update campaign (typically once every 3/4 years) to ensure a wide buy-in from the broader stakeholder community

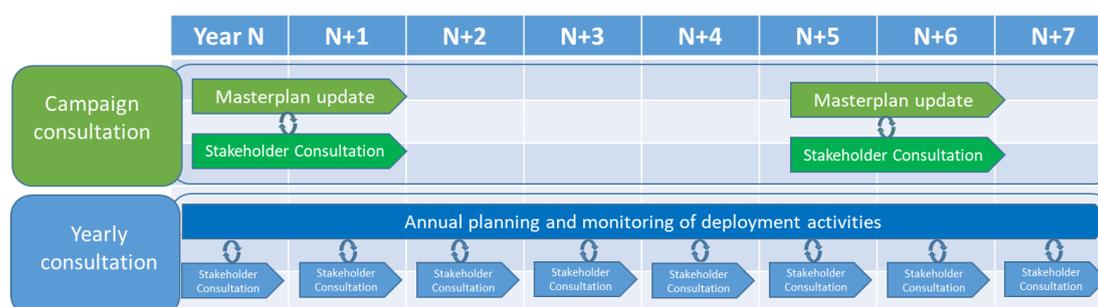


Figure 5: MP process consultation cycles beyond the SESAR 3 JU governance

Consultation during a MP update campaign

It is essential to the success of the campaign that the broader stakeholder community feels sufficiently informed throughout the process. During the update campaign, the full governance of the SESAR 3 JU, including the Programme Committee will be consulted to de-risk the outcome of the campaign.

When a proposed MP update is delivered by the SESAR 3 JU ED to the Governing Board, the formal consultation phase can be triggered by the Governing Board. This phase will allow all SESAR 3 JU members including the Union and Eurocontrol to establish their position in the SJU Governing Board. The position of the Union and Eurocontrol requires formal consultations with Member States (Single Sky Committee for the European Commission and Provisional Council for Eurocontrol) and if required, the SESAR 3 JU could be requested by the European Commission and Eurocontrol to organise ad-hoc workshops with Member States to support their respective formal consultation processes and de-risk the adoption process.

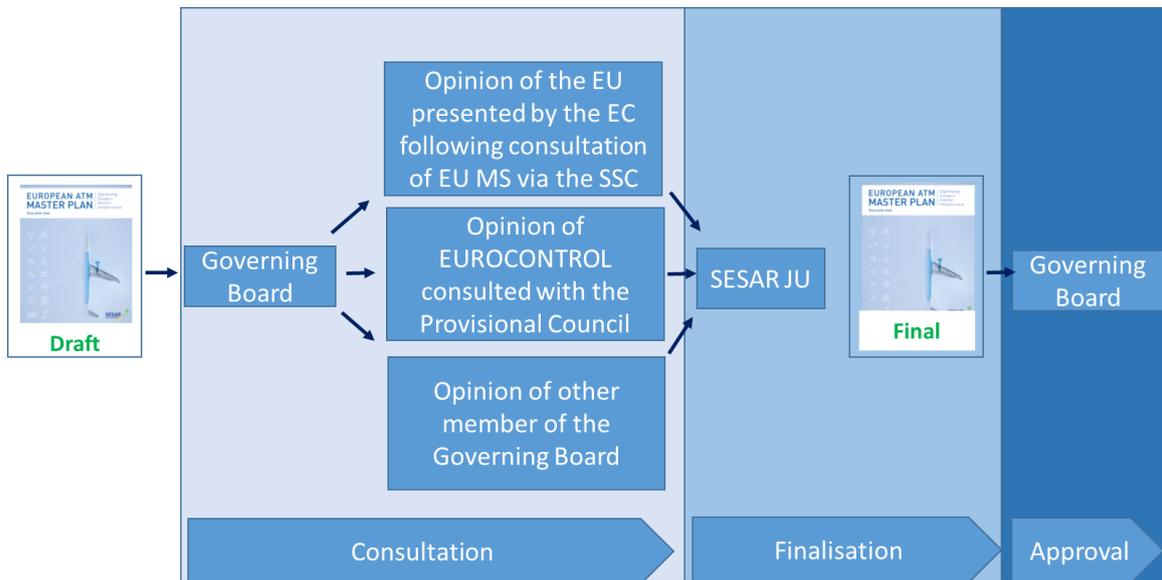


Figure 6: Formal consultation at the level of the SESAR 3 JU Governing Board

Coordination on deployment activities

The proposed Technical Coordination Group will be the “gateway” between the governance of the SESAR 3 JU and the governance of the other main entities contributing at EU level to the execution of the SESAR deployment activities as illustrated below. These entities will have to ensure the necessary buy-in in their respective governance arrangements.

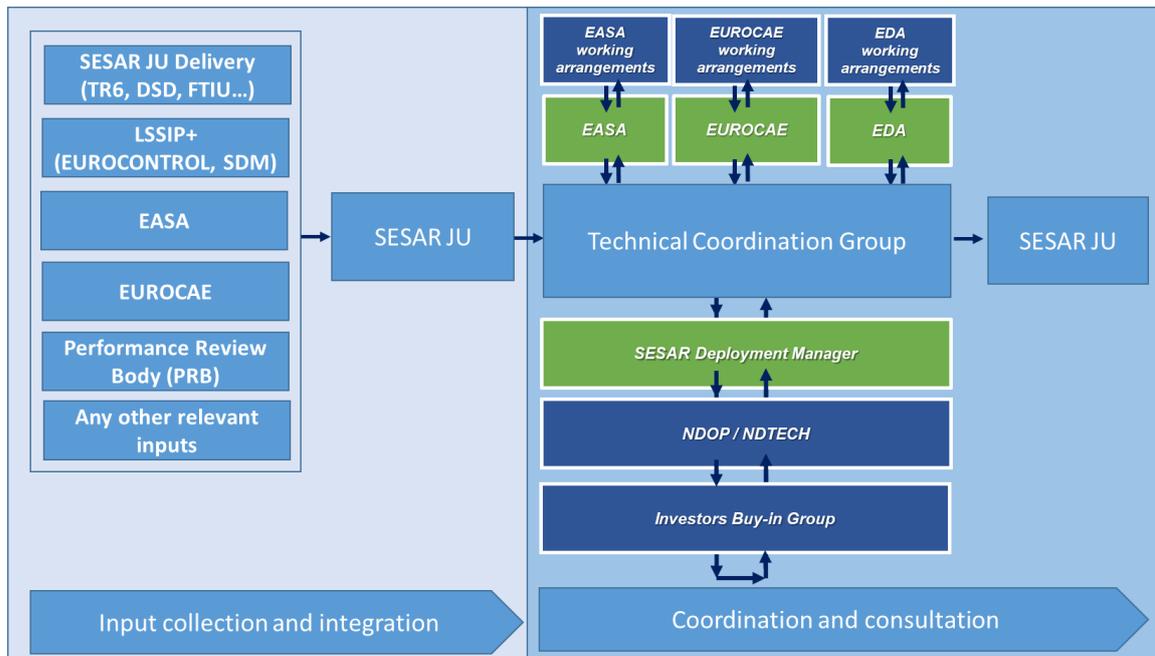


Figure 7: SESAR 3 JU Annual MP consultation phases

- **Input collection and integration:**

The MP provides the baseline for planning and monitoring SESAR deployment activities. With the support of the SESAR 3 transversal project, the SESAR 3 JU will collect and integrate all relevant inputs from relevant organisations. As SESAR Solutions become mature, it will also help keep a continuous connection between strategic deployment objectives defined in the MP, SESAR delivery and feed-back from operational stakeholders involved in deployment.

- **Coordination and consultation:**

The objective of the Technical Coordination Group will be to advise the SJU ED via a reporting to the Programme Committee (where all JU members are represented including the Commission) in monitoring and de-risking at technical level the roll out of the strategic deployment objectives defined in MP and facilitate accelerating SESAR market uptake.

In this context , the main tasks of the group will be to:

- Help streamline the stakeholder consultation process(es) to ensure an accelerated market uptake with appropriate feedback loops, particularly including the investing operational stakeholders
- Align, as appropriate, on standardisation and regulatory needs (conditions for successful roll-out of SESAR solutions)
- Provide a feedback loop on shared risks, issues and opportunities and trigger mitigation actions (e.g. launch of Digital Sky Demonstrators on certain topics)
- Annual alignment on the strategic monitoring report to be shared with the SJU governance
- Identify for each strategic deployment objective, the optimal reporting requirement (who reports on what, when is reporting triggered etc.) to avoid double reporting.
- Secure timely investors commitment from a critical mass of early movers when new solutions become available for deployment (as soon as TR6 is reached).