

Indicators for prioritisation and implementation of recommendations

EGO/Virgo Governance Implementation Committee

Loading the recommendations with information

In order to prioritise and implement the recommendations in a structured way, we have identified indicators that we could fill in for each (sub)recommendation.

Indicators:

- **Priority level:** 1 - highest priority , 2 – medium priority, 3 – lower priority
- **Estimated time:** time technically required to implement a recommendation
- **Required funding:** how much funding is needed to make implementation possible
- **Additional required staff:** is additional staff required for this recommendation?
- **Sensitivity:** high – sensitive topic for the community, low – not so sensitive topic
- **Stakeholders:** who will be affected by and involved with the implementation of the recommendation?
- **Implementation owner:** who is responsible for implementing the recommendation?
- **Legal:** are there any legal issues that need to be considered before implementation?
- **Practical concerns:** are there any practical challenges that should be considered?
- **Status:** how far along are we in implementing the recommendation?

Overview of the loaded recommendations



Recommendation	Priority level (1 top, 2 lowest)	Time estimate	Required funding	Additional required staff	Sensitivity	Stakeholders	Implementation owner	Legal	Practical concerns	Status	Comments
Operational and Governance											
1. EGO must play a much stronger role in detector construction, operation and integration after acceptance of detector (sub)systems at the EGO site.											
1.1 EGO director - responsibilities and profile	1.5	Oct 24 - 2025	x	x identified profiles (bring x - secondment)	high	Council Task force	Council		contract, EGO status?	Preparation	Council should provide its view on current director extension on December meeting.
1.2 Creation of Virgo lab	1	Oct 24 - Dec 24	x	x	(very) high	Implementation Comm, Council	Council / Virgo Pla			Preparation	Here the result of some work done in EGO on this point: On Functional, Predefined and Matrix Organization and Hiring Virgo Lab Org C
2. All technical decisions regarding operations and upgrades are made by the Executive Board (EB).											
2.1 Members and chair of the board	1	Oct 24 - Dec 24	x	Secondment of coordinators to EGO?	high	Task force, Implementation Comm, Council, VSC	Council / Virgo Pla			Preparation	
2.2 Creation of technical committee	1	Oct 24 - Dec 24	x	x	high	Task force, Implementation Comm, Council, VSC	EGO Director			Preparation	
2.3 Transition from VSC to EB - other responsibilities	1	2025	x	x	(very very) high	Task force, Implementation Comm, Council, VSC	Council / Virgo Pla			Preparation	
3. Oversight by the EGO Council should be strengthened by appointing a program officer											
3.1 The role foreseen in oversight and exchange between EGO Director and EGO Council	1	Oct 24 - Dec 24	x	x	med		Implementation Comm, Council			Preparation	
Project Management											
4. EGO and Virgo must adopt a rigorous project management structure that utilizes modern tools and procedures for detector operations and Observing Run, similar to any large-scale (International) research infrastructures.											
4.1 Rigorous reviews with external reviewers	1	Oct 24 - 2025	reviews travels / compensation	reviews availability	med		EBPO			Ongoing	An external review committee has been introduced for ADV+ Phase 0 - OS and it is being involved into the TDR review process in terms of tools. Virgo has adapted the Technical Documentation System (TDS) where documentation can be effectively managed and accessed. The main issue regarding making available the documentation, both for look of time and Intellectual Property issues that need cleared out.
4.2 All documentation centrally curated and available	2	Oct 24 - 2025	x	x	med	Virgo Groups Pla, Virgo Labs Directorate		IP policies review?		Ongoing	
4.3 Thorough risk analysis, resource estimation for big technical decisions	1	Oct 24 - 2025	x	x	med	reference PO (2 FTE)	EBPO			Ongoing	To help here, the hiring of 2 FTE on System Engineering for the ADV+ PO is currently foreseen.
4.4 Adapt a rigorous workflow	1	Oct 24 - 2025	x	x	med	reference PO (2 FTE)	EBPO			Ongoing	To help here, the hiring of 2 FTE on System Engineering for the ADV+ PO is currently foreseen.
4.5 Ensure adequate responsibilities for subsystems through reviews of proposals	2	Oct 24 - 2025	x	x	med	reference PO (2 FTE)	EBPO			Ongoing	To help here, the hiring of 2 FTE on System Engineering for the ADV+ PO is currently foreseen.
4.6 Increase the pool of experts for all subsystems by training	1	Oct 24 - 2025	mission + long stays funds	-10 - 20 FTE	med		EB, Virgo Groups Pla			Ongoing	In the framework of the ADV+ Director Training sessions, a first 1-week long School, focused on the Science of the detector, is being organized for November 2024.
Additional Financial Resources											
5. Additional financial resources are essential for the future of EGO/Virgo.											
5.1 Additional funding is mandatory	1	2025	x	x	med	FA	Council delegates/EGO director		Independence of EGO or Virgo involves additional bodies	Ongoing	4.5 on 2022, 4.99 2023, 6.62 2024, 6.73 on 2025 -> rattrapage de l'inflation depuis 2017, 2027, 6.82 en 2028 et en France, cavité stable 2025 et 2028 -> 10 M€
5.2 All Virgo members contribute through a Common Fund	1	2025	yes	x	med	FA	Council Delegates/ Virgo Pla Council		Virgo MCO to be updated	Ongoing	Mediator -> mise en place par Massimo
5.3 New Council members should contribute beyond CF	1	2025-2026	yes	x	med	FA			EGO contribution to be updated	Ongoing	Nihilat 40M€ sans augmentation, mais à long terme, update - sans réponse, Belgique 160M€ upgrade (flam), Polonais, Espagnol (on est en train de négocier)
6. The financial budget of EGO and the financial flows between EGO and Virgo have to be reviewed and clarified accordingly.											
6.1 EGO covered shared project finances in transparent manner	2	Dec 2023	x	x	med	Council	EGO director			Planned	
6.2 Budget for external institutes should not flow through EGO	2	2025	x	x	med	EGO	EGO director			Planned	to be decided with MESRS/DFM/Virgo-France mission or investment (LMA?)
6.3 Budget for external institutes should not flow through EGO	2	2025	x	x	med	EGO	EGO director			Planned	to be decided with MESRS/DFM/Virgo-France mission or investment (LMA?)
6.4 No in-kind contributions should be accounted for	2	Dec 2023	x	x	med	EGO	EGO director			Planned	
EGO permanent staffing											
7. A careful assessment of the EGO staffing needs should be carried out as soon as possible, with the goal of (i) identifying critical staffing shortfalls, and (ii) identifying (with the EGO Council) a means for increasing (funding for) EGO staff and closing the staffing shortfall gap.											
7.1 EGO analysis of overall staffing needs	1	Oct 24 - Dec 24	x	yes	med	EGO+EB	EGO director			Done	
7.2 EGO critical review of the internal EGO organization	1	Dec 24/Mar 25	x	x	med	EGO+EB	EGO director			Ongoing	Some limited EGO departments reorganization is ongoing associated to very urgent operational needs (due the expeditious maintenance project). This should be stopped or at least put in contraction, with the report recommendations.
7.3 Attention to attracting and recruiting international staff	2	2025	x	x	med	EGO+EB	EGO director			Planned	
7.4 Increase staffing by permanent funding and/or long-term secondment	3	2025	x	yes	med	EGO+EB	EGO director			Planned	
Virgo Collaboration											
8. The Virgo Collaboration must have an increased engagement (on-site) detector related activities and tasks of common interest.											
8.1 Virgo members should engage in (on-site) detector responsibilities		Dec 2024 - early 1 2025			high	Virgo groups (including EGO), EGO, funding agencies	Virgo spokesperson/management		The exact implementation might change a bit when the Virgo lab is defined, but we can have a document start (and maybe not necessarily implementation).	Planned	We can imagine to enforce a rule (e.g. each subsystem has to have at least one person on site, or there must be at least 8 person in a central activity etc.) even before defining the Virgo lab. It is very important that we finalize the clear list of needed FTE and profiles we formally request (to the run coordinator + commissioning coordinator). Also, we would need to have the agreement of the 5, especially to e.g. cover the travel expenses etc. We can focus on a short-term plan valid for the running time (until June 2025) to get the and take a bit more time for the "teary commissioning" phase. This might be a "low-hanging fruit".
8.2 Authority should be linked to instrument activities		early 2025 (but could be early 2027) see 1 comment)			high	Virgo groups (including EGO), EGO, funding agencies	Virgo spokesperson/management		hard to implement, related to IGMN (instrumental deadline ~2026)	Planned	we have reviewed (for the first half of Virgo groups in December 2023-January 2024 and we're doing the other half this year) for terms and to be sure we are ready, we can announce the new rules this year but only put them in action at the next MAU event. Also, we should have undertaken the entire service tasks, vs "instrumental activities". Authority in the LVM (even to be IGMN) is based on contributions to service tasks, it can be of different nature (instrumentation, computing, work on data quality, new theory infrastructure, production of catalogs etc.). We would imagine that membership of the Virgo-lab (and authority for detector-related papers) will be linked to instrument activities.
9. The EGO site should be made more attractive and scientifically vibrant for the EGO staff as well as for the Virgo Collaboration members and the wider international gravitational-wave community.											
9.1 EGO and Virgo leadership should be based and present on site	2	now	x		med	single collaborators	the Council?			Planned	Maybe we can define a reasonable request for present management, and decide what we want to set as requirements in the future. We make sure we ensure transparency of communications and documentation of decisions.
9.2 Initiate postdoctoral fellowships and long-term secondments		early 2025	x	x	med	EGO, Virgo groups, on site	the Council?		It is not sure how fast we can get the funding. It is the time needed to announce the postdoctoral positions with long-term resources	Planned	From the information I have, this has proven to be very useful for LIGO. We must make sure we are ready to welcome new people post move in training (a big change for Virgo) it would also be very interesting to explore a sort of "exchange" program to invite some LIGO colleagues (fellow-like or more senior) to spend some time at the site. This might also be a low-hanging fruit?
9.3 Develop a vibrant scientific culture on-site		3								Planned	I see this as a long-term project. We would first need to define a set of concrete actions. Partly this will also happen as a consequence people being more on site.
9.4 Establish a User's Office to assist visiting scientists/engineers		1 early 2025	don't think so	don't think so	low	EGO	EGO director (?)			Ongoing	This is definitely a low-hanging fruit. I have the impression it does not necessarily need more person power as we could integrate the EGO (or people seconded to EGO) resources, but I would need to check. Franco what do you think? Somewhat related - we should do with our efforts to have a grant from the US to be checked with Massimo. Franco: the profile for the Administrative Assistant - User has been defined and recruitment process should start shortly.
9.5 Increase international and cultural diversity on-site											
Virgo and Einstein Telescope											
10. The impact of the prospect of the Einstein Telescope (ET) project on Virgo should be carefully managed.											
10.1 Funding agencies, Virgo and ET collaborations should keep Virgo as a priority	3	2025-	x	x	med	EGO council, Virgo collaboration, ET	EGO council president			Planned	If a funding "barrier" is open to E.T. should also still fit into the negotiation of the 1.8. Funding provided.
10.2 Look for opportunities to redirect existing ET R&D funding to Virgo	3	2025-2027	x	x	high (outside Virgo)	EGO council members and Virgo EGO director, Virgo EB, ET, EB, LMA	EGO council president			Planned	This can only be established. This can only be a legal realisation in coordination with ET
10.3 Initiate a high-level European gravitational-wave coordination board	3	2025-2027	1.0 d.	x	med	EGO director				Planned	

The seven topics of recommendations as defined by the review committee:

- Organization and governance
- Project management
- EGO Council and finances
- EGO staffing
- Virgo Collaboration
- Site attractiveness
- Virgo and Einstein Telescope

Link to the table:

<https://docs.google.com/spreadsheets/d/1qcrxE8qZ1RrcnOPjVjmwu8NAAIGN9i32GgVTWRe70fM/edit?usp=sharing>

Organization and governance

	Time estimate	Additional required staff	Sensitivity	Stakeholders	Implementation owner	Legal
1. EGO must play a much stronger role in detector construction, operation and integration after acceptance of detector (sub)systems at the EGO site.						
1.1 EGO director - responsibilities and profile	Oct 24 - Dec 25		high	Council	Council	contract, EGO statute?
1.2 Creation of Virgo-lab	oct 24 - dec 24	identified profiles (hiring + secondment)	(very) high	Task force, Implementation Comm, Council, VSC	Council / Virgo PIs	
2. All (technical) decisions regarding operations and upgrades are made by the Executive Board (EB).						
2.1 Members and chair of the board	oct 24 - dec 24	Secondment of coordinators to EGO?	high	Task force, Implementation Comm, Council, VSC	Council / Virgo PIs	
2.2 Creation of Technical committee	oct 24 - dec 24		high	Task force, Implementation Comm, Council, VSC	EGO Director	
2.3 Transition from VSC to CB - other responsibilities	2025		(very very) high	Task force, Implementation Comm, Council, VSC	Council / Virgo PIs	
3. Oversight by the EGO Council should be strengthened by appointing a program officer						
3.1 The role foresees in oversight and exchange between EGO Director and EGO Council	oct 24 - dec 24	t.b.d.	medium	Implementation Comm, Council	Council	

Project management

	Time estimate	Required funding	Additional required staff	Sensitivity	Implementation owner	Legal
4. EGO+Virgo must adopt a rigorous project management structure that utilizes modern tools and procedures for det. operations and obs. runs						
4.1 Rigorous reviews with external reviewers	oct 24 - 2025	reviewers travels / compensation	reviewers availability	med	EB/PO	x
4.2 All documentation centrally curated and available	oct 24 - 2025	x	x	med	Virgo Groups Pls, Virgo Labs Directorate	IP policies review?
4.3 Thorough risk analysis, resource estimation for big technical decisions	oct 24 - 2025	x	reinforce PO (2 FTE)	med	EB/PO	x
4.4 Adopt a rigorous workflow	oct 24 - 2025	x	reinforce PO (2 FTE)	med	EB/PO	x
4.5 Ensure adequate responsibilities for subsystems through reviews of proposals	oct 24 - 2025	x	reinforce PO (2 FTE)	med	EB/PO	x
4.6 Increase the pool of experts for all subsystems by trainings	oct 24 - 2025	missions + long stays funds	~ 10 - 20 FTE	med	EB, Virgo Groups Pls	x

Prioritising the recommendations

From filling in the table and all information that is compiled in the Organisational review report we extracted four top priority implementations:

- Creation of Virgo-lab
- Implementation of Executive Board
- Implementation of Technical committee
- Transformation VSC to Collaboration Board