

Memorandum of Agreement

between

KAGRA,

VIRGO,

and the

Laser Interferometer Gravitational Wave Observatory (LIGO)

under the umbrella of the

International Gravitational-Wave Observatory Network (IGWN)

September 28, 2026

1 Parties to the agreement

1.1 KAGRA

KAGRA denotes the KAGRA Collaboration. The KAGRA Collaboration is composed of more than 400 individuals from more than 90 institutions. KAGRA project is supported by Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan. KAGRA is hosted by Institute for Cosmic Ray Research (ICRR), the University of Tokyo and co-hosted by High Energy Accelerator Research Organization (KEK) and National Astronomical Observatory of Japan (NAOJ). In this agreement, the KAGRA Collaboration is represented by the Chair of the KAGRA Scientific Congress (KSC) Board, who serves as the KAGRA Spokesperson. The Chair is elected by the KSC Board members. The KSC Board consists of members elected by the KSC, representatives of participating countries and regions, and representatives of early-career scientists.

1.2 LIGO

LIGO (Laser Interferometer Gravitational-Wave Observatory) denotes hereafter the LIGO Scientific Collaboration (LSC) including the LIGO Laboratory.

Gravitational-wave detectors in LIGO Hanford and LIGO Livingston Observatories are operated as LSC detectors by the LIGO Laboratory. California Institute of Technology (Caltech) and Massachusetts Institute of Technology (MIT) jointly operate LIGO Laboratory for the National Science Foundation (NSF) under a Cooperative Agreement between NSF and Caltech, with MIT participating through subaward from Caltech. The GEO600 detector, located near Hannover, Germany, is also an LSC detector. The LIGO India Observatory, located in the Hingoli region (Maharashtra), India, is under construction.

The LSC Charter (LIGO-M2000029), LSC Bylaws (LIGO-M050172) and LSC Policies and Procedures (LIGO-M1900139) establish the functions, organizational structure, policies and procedures of the LSC.

In this agreement the LIGO Scientific Collaboration is represented by the Spokesperson elected by the LSC Council, and the LIGO Laboratory is represented by the Executive Director of the LIGO Laboratory.

1.3 VIRGO

VIRGO denotes the Virgo Collaboration and the European European Gravitational Observatory (EGO) Consortium.

The Virgo Collaboration is currently composed of approximately 1000 scientists, engineers, and technicians from about 125 institutes in 21 countries. EGO is the institutional host of VirgoLab, the distributed laboratory responsible for the operation, maintenance, commissioning, and upgrade of the Virgo interferometer in Cascina, Italy. VirgoLab is not a legal entity, EGO is its legal representative. EGO's funding agencies are: Centre National de la Recherche Scientifique (CNRS) in France, the Istituto Nazionale di Fisica Nucleare (INFN) in Italy, the Foundation for Dutch Scientific Research Institutes (NWO-I) in the Netherlands, the Research Foundation Flanders (FWO) and the Fonds de la Recherche Scientifique (FNRS) in Belgium.

The Bylaws of the Virgo Collaboration (VIR-0456E-22) and the Organizational Structure of the Virgo Collaboration (VIR-0455B-22) establish the statutes, organizational structure and procedures of the Virgo Collaboration.

In this agreement the Virgo Collaboration is represented by the Spokesperson elected by the Virgo Steering Committee, and the EGO Consortium is represented by the Director of EGO, appointed

by the EGO Council.

2 Purpose of Agreement

The purpose of this Memorandum of Agreement (MoA) is to:

- (a) Establish and define the collaborative framework under which the Parties will operate during the observing run designated Intermediate Run 1 (IR1), which is currently expected to begin between late October and mid-November 2026 and to last approximately six months, and during the proprietary data period following IR1;
- (b) Implement a unified scientific program, common membership and automatic authorship criteria, and coordinated operations.
- (c) Bridge the transition from the current LIGO-Virgo-KAGRA (LVK) structure to the full the International Gravitational-wave Observatory Network (IGWN) Consortium.

This MoA and its Annexes (at the end of this document) govern the matters they address during the term of this MoA. The draft IGWN Consortium Foundational Documents described in Annex G remain under development and are cited here for context; they will take effect only with the initiation of the full IGWN Consortium.

Note that we refer to the collaborative framework established by this MoA as “IGWN” in this document for brevity even though it is not yet the full IGWN Consortium.

This MoA builds upon and supersedes the LVK MoA and its Attachment A, both dated October 2019 (LIGO-M1900145/VIR-1139A-19/JGW-M1910663 and LIGO-M1900146/VIR-1140A-19/JGW-M1910664).

3 Scope of the Agreement

1. This agreement governs cooperative scientific work between LIGO, VIRGO, and KAGRA during the transitional period toward the full IGWN Consortium. The Parties agree that all of their gravitational-wave analysis work will be carried out under the framework of this

agreement; however, each Collaboration retains the ownership of and control over its own data.

Agreements involving gravitational-wave data sharing with other parties will be initiated and carried out jointly by LIGO, VIRGO, and KAGRA in a spirit of teamwork.

2. This agreement represents a scientific agreement between independent Collaborations, not a merger. The three Collaborations maintain their independent existence and their separate governance structures throughout the term of this MoA. They may have differing, but not mutually incompatible, internal rules and procedures, provided these are consistent with the provisions of this MoA (see Section 13).
3. Decisions on issues that bear on all collaborative work will be made jointly by the three collaboration governing bodies, with the IIB acting to co-ordinate decision making, within the coordination framework defined in Section 5.
4. Goals for joint gravitational-wave analysis will be defined through the IGWN Program (Section 6 and Annex A) and proposed by IGWN Divisions and Working Groups (Annex C). They will be submitted to each Collaboration for approval according to its own governing structures. The Program is considered adopted only upon confirmation by all three Collaborations.

4 Organizational Structure during the IGWN MoA Period

During the term of this MoA, the following IGWN organizational bodies are established or formalized. The bodies described below operate alongside – and in coordination with – the existing governance structures of the three Collaborations. The structure of IGWN Divisions, Working Groups, and Committees operational during the MoA period is set out in Annex C.

4.1 Inaugural IGWN Board (IIB)

The Inaugural IGWN Board (IIB), which was originally established as defined in the IGWN Formation Document (LIGO-M2500031, VIR-0236C-25, JGW-M2516540), serves as the primary coordination body within the scientific network.

5. The IIB comprises:

- The European Gravitational-wave Observatory Director
- The KAGRA Principal Investigator
- The LIGO Laboratory Executive Director
- The Spokesperson and Deputy Spokesperson of the Virgo Collaboration
- The Spokesperson and Deputy Spokesperson of the LSC
- The Spokesperson of the KAGRA Collaboration and the KAGRA Observatory Director

6. The IIB is charged with:

- (a) overseeing the implementation of this MoA;
- (b) identifying shared needs and establishing IGWN services;
- (c) facilitating communication with the IGWN Joint Oversight Group (IJOG) of funding agency representatives on matters regarding operations, funding models, and strategic planning;
- (d) making appointments, where required, to IGWN Division, Working Group, and Committee leadership positions when there is a vacancy, as specified in Annex C;
- (e) coordinating the transition to the full IGWN Consortium, following the milestones laid out in the IGWN Formation Document

7. The IIB members select a Chair and Deputy from among their membership to call and preside over IIB meetings. IIB meetings may take place virtually or in person. The IIB may take decisions when at least five of its nine members are present, including at least one member from each Collaboration. When these conditions are not met, the IIB may discuss a matter but any decision must be deferred. The IIB functions by consensus. Where consensus cannot be reached, a vote will be called by the IIB Chair and the outcome will be determined by simple majority. The KAGRA Principal Investigator, the EGO Director, and the LIGO Executive Director will each have one vote for a total of three votes. The LSC, Virgo, KAGRA Spokespersons, the LSC and Virgo Deputy Spokespersons, and the KAGRA Observatory Director will each have a one-third vote for a total of two votes.

8. If, during the period of this MoA, the IGWN Board (as described in the IGWN Consortium Foundational Documents) is formed then, upon approval by the three Collaborations, the IIB will dissolve and the IGWN Board will inherit all authority, responsibilities, and appointment powers assigned to the IIB or IIB Chair under this MoA and its Annexes for the remainder of the MoA period. Thus, references in this MoA to the IIB or IIB Chair should be understood to mean the IGWN Board or IGWN Board Chair after that point in time.

4.2 Joint IGWN Executive Committee (JEC)

9. A Joint IGWN Executive Committee (JEC) is established to coordinate operational decisions and actions across the IGWN Divisions and the three Collaborations during the MoA period. The membership of the JEC comprises:

- Members of the IIB
- One chair from each IGWN Division
- One chair of the IGWN Editorial Committee
- One representative from each IGWN Detector
- The IGWN Chief Information Security Officer

The JEC is responsible for managing the overall operations of the IR1 Observing run and production of scientific results from the IR1 data. The JEC can make and execute decisions to carry out day-to-day activities as needed for those purposes.

10. If the IIB is dissolved and its responsibilities and authority transferred to the IGWN Board as described in section 4.1, then the JEC will essentially become the IGWN Executive Committee described in the IGWN Consortium Foundational Documents. Upon approval by the three Collaborations, the JEC will formally dissolve and the IGWN Executive Committee will inherit all authority and responsibilities assigned to the JEC for the remainder of the MoA period.

4.3 Program Committee (PC)

11. The IGWN Program Committee (PC) develops and maintains the IGWN Program. The PC advises the IIB and the Collaborations on the scientific priorities and resource needs of the

joint program. PC initial composition and charge are described in LIGO-M2500089.

4.4 Implementation Committee (IC)

12. The Implementation Committee (IC) continues the development of the IGWN Charter, By-laws, and Level 2 documents in preparation for the full IGWN Consortium. The IC reports to the IIB and its complete charge (including responsibilities, composition, interactions and reporting) may be found in M2600136.

4.5 Finance and Resource Allocation Committee (FRAC)

13. The IGWN Finance & Resource Allocation Committee (FRAC) develops the IGWN Cost Model and fee structure and works with the PC to ensure that the required resources are available to carry out the IGWN Program. The FRAC charge is described in (M2600102, VIR-0322A-26, JGW-M2617387). The FRAC reports to the IIB.

4.6 Observatory Network Run Coordination Committee (ONRCC)

14. The Observatory Network Run Coordination Committee (ONRCC) is charged with strategic planning and coordination of engineering and observing runs across the IGWN detector network, including coordination with concurrent external (non-gravitational-wave) observations and timely communication of detector status to LIGO, Virgo and KAGRA collaboration members and the multi-messenger community.
15. The members of the Observatory Network Run Coordination Committee are
 - The Chair, who is appointed by the IIB
 - The Run Coordinator at each IGWN site
 - Representatives from Observational science, Operations and Digital Infrastructure, appointed by the corresponding division chairs.
 - The LIGO Lab Chief Detector Scientist and Chief Engineer
 - The VirgoLab Upgrade Coordinator and Commissioning Coordinator
 - Two representatives from KAGRA, representing detector commissioning and upgrade expertise

- The chair of the Observatory Network Run Coordination Committee may appoint additional members to the Committee, as needed.

4.7 Common Decision-Making Process

16. No joint voting body is created at the top-level IGWN governance by this MoA. For matters affecting all three Collaborations that require approval by the collaboration governing bodies, the governing body of each Collaboration shall consider and vote on the same proposal in accordance with its bylaws.
17. To facilitate consistent decisions by the three Collaborations, the following process shall apply:
 - (a) Proposals for new policies will typically originate in a joint Division, Working Group, or Committee, including the JEC. Once a proposal is sufficiently mature, it will be submitted to the IIB for coordination.
 - (b) Each Collaboration Spokesperson shall inform their Collaboration's governing body of the proposal and provide an opportunity for discussion in accordance with that Collaboration's bylaws.
 - (c) The IIB, working with the originating group, shall seek to resolve issues raised during these discussions and to develop consensus across the three Collaborations.
 - (d) Once consensus has been developed, the Collaboration Spokespersons shall present an identical proposal to their respective governing bodies for approval in accordance with their bylaws.
 - (e) A proposal shall take effect only after approval by all three Collaborations.

The top-level process defined in this Section ensures that there is always an opportunity for cross-Collaboration deliberation before individual approval decisions are taken on matters requiring a common decision by all three Collaborations. The authority of the IIB under Section 13 to resolve how this MoA affects actions taken prior to the establishment of this MoA is not an alternative route to a common decision: it applies only to provisions already adopted, not to the making of new ones.

5 Coordination and Operations

18. Members of LIGO, VIRGO, and KAGRA will meet regularly to exchange information on detector status, the progress of joint analysis, and to share plans for future data collection, instrument repairs, and detector enhancement. The leaders of the Observatories and Collaborations will work to coordinate those plans, with the goal of optimizing the science done with the network of instruments.
19. The LIGO, VIRGO and KAGRA Observatories will co-ordinate the engineering and observing runs across the IGWN detector network. This co-ordination will be led by the ONRCC introduced in Section 4.6.
20. The sharing of commissioning experience and Research and Development (R&D) in all areas of Instrument and Observational Science is encouraged, respecting all parties' publication and academic precedence rules. The leadership of all Collaborations shall be made aware of joint commissioning activities.
21. All acquired data from IR1 will be made available to all three Collaborations to be used in the framework described in this agreement. All analysis activities on proprietary data, their documentation, and the software used for such activities will be open to all members of the three Collaborations in a spirit of cooperation, open access, full disclosure, and transparency.
22. During the term of this MoA, IGWN Digital Infrastructure (DI) services will be progressively deployed according to the IGWN Digital Infrastructure Plan (LIGO-M2600037, VIR-0174A-26, JGW-M2617216), as described in detail in Annex E.

6 IGWN Program

23. The IGWN Program defines the scope and priorities of the scientific activities carried out under this MoA. It is developed by the Program Committee, informed by the Divisions and Working Groups, and approved by each Collaboration according to its own governance structures. More details about the nature of the IGWN Program are summarized in Annex A.

24. Gravitational-wave analysis projects will be organized in Divisions and Working Groups as defined in Annex C. Every analysis project shall be affiliated with at least one Division or Working Group. Participation is open to all members of the three Collaborations.
25. Any significant change to the Program, including changes to the IGWN Publication Plan, cyclic (e.g., annual) Program updates, or other major changes, will be submitted to each Collaboration for approval according to its own governing structures and will be considered adopted only upon confirmation by all three Collaborations.

7 Membership, Authorship, and Good Standing

26. **IGWN Science Responsibility (ISR).** For the duration of this MoA, the three Collaborations will align their internal authorship, membership and good-standing criteria with the ISR framework defined in Annexes A.
27. **Good standing (legacy groups).** Groups that were in good standing in LIGO, VIRGO, and/or KAGRA as of the signing of this MoA retain good standing through the public release of IR1 data. The conditions for retaining this standing are that the Group submit the required Work Plan(s), participate in any Work Plan reviews conducted under this MoA, and abide by the Code of Conduct (Section 11). For the duration of this MoA, a legacy Group's standing is not affected by the ISR group good-standing thresholds described in Annex B.
28. **Good standing (new groups).** Groups that join LIGO, VIRGO, and/or KAGRA after the signing of this MoA must meet the ISR requirements of Annex B to establish and maintain good standing under this MoA.
29. **Transitional Automatic Authorship.** All members listed on the LVK author list as of August 2026 will be automatically included as authors of observational papers based on IR1 data, regardless of the status of any inter-collaboration agreement at the time IR1 data-taking begins. This transitional measure remains effective for all papers based on IR1 data and listed in the IR1 Publication Plan.
30. **Automatic Authorship (new authors).** Members of a group in good standing may earn the right to automatic authorship on all IGWN-wide publications — that is, publications carrying

the full IGWN author list — through substantial contributions to the IGWN Program, as described in Annex B. Single-Collaboration and short-author-list publications, described in Annex D, are not IGWN-wide publications.

31. **Author lists** of those eligible to sign observational papers will be separately established by the three collaborations according to the rules in Annex B, and maintained by them. The author list will be revised twice per year, in February and August. All papers authored by eligible VIRGO, KAGRA, and LIGO authors will list those authors alphabetically in a single author block with a common attribution line. Until such time as the IGWN Consortium is founded, the author attribution line for all IR1 observational papers shall read:

**The LIGO Scientific Collaboration, the Virgo Collaboration, and the KAGRA
Collaboration**

For papers involving external partners, authorship rules for external authors will be specified in the corresponding Memorandum of Understanding; otherwise, those authors will be listed alphabetically in a separate authorship block.

8 Review and Publication of Observational Results

32. The Collaborations shall agree on an IGWN Publication Plan before the start of the IR1 observing run. The IR1 Publication Plan lists the papers that the Collaborations commit to publishing using IR1 data, following the process defined in Annex D.
33. Each gravitational-wave analysis will be critically reviewed before publication is considered. The review process is defined in Annex D.
34. All data and their interpretation will be held strictly within the membership of the Collaborations until the review processes are complete and the three Collaborations have given their permission for public release. This clause does not govern the release of strain data, which follows Section 9. No discussion of results or preprints shall take place with scientists who are not members of the Collaborations or with members of the media, until the leaderships of the Collaborations have approved the release. Discussion with external collaborators is

only permitted where it is covered by an agreement to which the three Collaborations are party.

35. Papers on observational results and their dissemination shall follow the rules defined in Annex D. In this context, the *dissemination* of a paper means its first public release, whether as a preprint or as a journal publication.

9 Data Policy and Public Release

36. The three Collaborations recognize their interest in making their data public, with the objective of enabling reproduction of IGWN results and further exploitation of the data by the broader scientific community. These data comprise documented and calibrated strain time series, as well as a subset of auxiliary data and data products associated with analysis results and publications. After public release, the data are open to all members of the Collaborations for subsequent analysis.
37. The three Collaborations will release, simultaneously with publications analyzing transient events, strain data around the times of those events. These data will feature the full bandwidth that is used within the Collaborations.
38. The three Collaborations will release Open Public Alerts, with low latency, for all interesting signal triggers, and follow-up information sufficient for non-GW observers to identify hosts.
39. **Preemption policy:** Publications that would preempt planned collaboration publication plans are not permitted, even on publicly available data. Details of the pre-emption policy are available at LIGO-M2600211.
40. **IR1 strain data release schedule.** All strain data collected during the IR1 observing run will be released as a single data set, a minimum of twelve months after the end of the data collection period. Data release dates may be shifted by a few days to fall on regular work-days. The data release will include documented and calibrated strain time series, as well as data products associated with analysis results and publications, consistent with the practice established for O4. The approved data release schedule is maintained at LIGO-M2300059, VIR-0966C-24.

41. The three Collaborations will take all reasonable measures to ensure that users of any IR1-period data made public properly credit the Collaborations and their respective funding agencies.
42. **Data beyond IR1.** This section governs the public release of IR1 data only. It does not preclude or delay the public release of data from subsequent observing runs; the release policy for those runs will be defined separately.

10 Instrument Science and R&D

43. Open sharing of technical information is encouraged among all members in areas related to commissioning and R&D on detector upgrades, together with collaboration on the development of techniques that may contribute to future interferometers. Visits of scientists to the observatories and campus research facilities of the other projects are similarly encouraged.
44. As described in Annex C, the IGWN Instrument Science Division will act as a common forum for IGWN-wide instrument science discussions, without disrupting current organisation in the LSC, Virgo and KAGRA collaborations. During the MoA period, this will involve a transition from single collaboration working groups to joint groups and, during that transition, any meetings of instrument science working groups of one Collaboration will be open to members of the other Collaborations.
45. A joint review process for instrument science, technical, and R&D papers is defined in Annex D.

11 Code of Conduct and Sanctions

46. The LIGO, Virgo, and KAGRA Collaborations strive for workplaces free from discrimination and harassment. The Collaborations shall not tolerate instances of scientific misconduct, characterized by fabrication, falsification, or plagiarism.
47. The LVK Code of Conduct document (LIGO-M1900037, VIR-0222A-19, JGW-M2617298) remains the defining document. Each Collaboration may provide additional measures consis-

tent with this Code of Conduct.

48. Members who experience or witness a breach of professional conduct should report it through the grievance mechanism of their Collaboration. The procedure for evaluating and appealing sanctions follows the procedures of each Collaboration.

12 Coordination with Governing Bodies and Sponsors

49. Each Party continues to be responsible for obtaining all resources, and for all support of its staff including travel costs associated with activities under this MoA.
50. The IIB shall serve as the primary interface with the IJOG for matters regarding future operations, funding models, and global strategic planning, in accordance with existing agreements between each Collaboration and its respective funding agencies.
51. In order to preserve intellectual property rights, the leaders of the three Collaborations and their respective Observatory Directors/Principal Investigators will promptly inform each other of any invention resulting from joint actions which might lead to intellectual property rights. Observatory Directors/Principal Investigators will be responsible to further notify their respective governing bodies as well as relevant institutions and sponsors from their Collaboration with any possible interest in those intellectual property rights.
52. The LIGO Laboratory is responsible for obtaining NSF approval of this MoA where required. All annexes will be provided to NSF for information.
53. The Virgo Spokesperson and the EGO Director are responsible for obtaining the EGO Council approval of this MoA. All annexes will be provided to the EGO Council for information.
54. The KSC Spokesperson is responsible for obtaining the necessary approvals from the KA-GRA Collaboration.

13 Alignment of the Collaborations

55. The three Collaborations will make every effort to come to agreement on issues bearing on collaborative work covered under this MoA.

56. By approving this MoA, the Collaborations agree to seek, through their respective established governance processes, the adoption of such amendments to their bylaws as may be necessary to achieve full consistency with this MOA. Such consistency may be achieved either through the adoption of a “framing statement” incorporating this MOA by reference or through specific amendments to the bylaws.

Nothing in this MoA shall be construed as amending, superseding, or waiving any Collaboration’s bylaws. Any amendments to a Collaboration’s bylaws shall be adopted in accordance with that Collaboration’s established procedures.

Until such amendments are adopted, the Collaborations shall implement and operate under the provisions of this MoA to the fullest extent consistent with their existing bylaws and shall work together in good faith to achieve the objectives of this MoA.

57. For actions taken by the IIB prior to the establishment of this MoA, the IIB shall resolve how the provisions of this MoA affect those prior actions. In exercising this authority, the IIB shall consult with the relevant Collaboration governing bodies for input if there may be points of disagreement. (This authority extends only to actions taken previously; matters requiring a new common decision follow the process in Section 4.7.)
58. In the event that a conflict between the three Collaborations cannot be resolved in good faith through discussions between the Collaborations’ leaders and governing bodies, each Collaboration may act independently using its own data, personnel and policies. No Collaboration shall impede the work of any other Collaboration. The Collaborations will continue joint activities on projects that are not affected by the conflict.

14 Transitional Provisions

59. **Relationship to the LVK MoA.** The LVK MoA (LIGO-M1900145/VIR-1139A-19/JGW-M1910663) ceases to be effective on December 31, 2026. Data collected under the terms of the LVK MoA, ongoing analysis of them, and any publications and presentations using them remain governed by the terms of the LVK MoA, unless all parties agree to a change.
60. **Unfinished O4 publications.** LVK papers that are still under review or in preparation on

December 31, 2026 will continue to be managed under the publication rules of the LVK MoA until their completion.

61. **Transition timetable.** The transition milestones are recorded in the IGWN Formation Document (LIGO-M2500031, VIR-0236C-25, JGW-M2516540, Table 1). The IIB will report progress against these milestones to the Collaborations and to the IJOG on a regular basis.
62. **Transition to the IGWN Consortium.** The formal establishment of the IGWN Consortium is expected to occur during the MoA period. Governance continuity during the overlap between the MoA period and the Consortium formation will be managed by the IIB in coordination with the Collaborations, in accordance with the IGWN Formation Document.

15 Term of the Agreement

63. This MoA comes into force after approval by the Collaborations' governing bodies and signature by all Parties.
64. This MoA covers collaborative work from the date of signature until the public release of IR1 data, subject to the exception in the following clause. It may be amended or extended by mutual agreement.
65. Cessation of any data exchange may take place at the request of LIGO, VIRGO, or KAGRA. By exception to the preceding clause, data collected under the terms of this MoA, ongoing analysis of them, and any publications and presentations using them remain governed by the terms of this MoA and its annexes indefinitely, unless all Parties agree to a change. Transitional plans to manage any IR1 publications unfinished at the date of the public release of IR1 data will be put in place.

Signatories

Approved:

David Reitze	Date
LIGO Executive Director	

Stephen Fairhurst	Date
LSC Spokesperson	

Massimo Carpinelli	Date
Director of EGO	

Marie Anne Bizouard	Date
Virgo Collaboration Spokesperson	

Takaaki Kajita	Date
KAGRA Principal Investigator	

Masaki Ando	Date
KSC Board Chair	

Acronyms

AFC Awards and Fellowships Committee

Caltech California Institute of Technology (USA)

CBC Compact Binary Coalescence

CEO Communications, Education and Outreach

CISO Chief Information Security Officer

CNRS Centre National de la Recherche Scientifique (France)

DI Digital Infrastructure

ECAC Early-Career Advisory Committee

ECS Early Career Scientist

ECSF Early Career Scientists Forum

EGO European Gravitational Observatory

ENC Election and Nominations Committee

FNRS Fonds de la Recherche Scientifique (Belgium)

FRAC Finance & Resource Allocation Committee

FWO Research Foundation Flanders (Belgium)

GRASP Gravitational-wave Resource Allocation and Science Planning

GWTC Gravitational Wave Transient Catalog

IAM Identity and Access Management

IC Implementation Committee

ICRR Institute for Cosmic Ray Research (Japan)

IGWN the International Gravitational-wave Observatory Network

IIB Inaugural IGWN Board

IJOG IGWN Joint Oversight Group

INFN Istituto Nazionale di Fisica Nucleare (Italy)

IR1 Intermediate Run 1

ISC Information Security Committee

ISR IGWN Science Responsibility

JEC Joint IGWN Executive Committee

KEK High Energy Accelerator Research Organization (Japan)

KSC KAGRA Scientific Congress

LIGO Laser Interferometer Gravitational-Wave Observatory

LSC LIGO Scientific Collaboration

LVK LIGO-Virgo-KAGRA

MAC Member and Author Committee

MEXT Ministry of Education, Culture, Sports, Science and Technology (Japan)

MIT Massachusetts Institute of Technology (USA)

MoA Memorandum of Agreement

NAOJ National Astronomical Observatory of Japan

NSF National Science Foundation (USA)

NWO-I Foundation for Dutch Scientific Research Institutes (The Netherlands)

ONRCC Observatory Network Run Coordination Committee

PC Program Committee

PWT Paper Writing Team

RAP Rapid Alert Project

RRT Rapid Response Team

WBS Work Breakdown Structure

Annexes

The following Annexes form an integral part of this MoA:

A: IGWN Program

B: Membership, Authorship, and ISR Framework

C: IGWN Division and Working Group Structure during the MoA

D: Data Sharing, Publications, and Dissemination Rules

E: Digital Infrastructure Transition

F: Shared Commercial Costs, Computing Resources, and Personpower

G: the International Gravitational-wave Observatory Network (IGWN) Consortium Draft Documents

A IGWN Program

This Annex describes the IGWN Program which, during the period of time covered by this MoA, the LSC, Virgo and KAGRA Collaborations will use to guide their scientific and programmatic activities in a fully aligned manner. Each Collaboration’s governing body approves the IGWN Program following its formulation or major updates.

A.1 Scope and Scientific Targets

1. The IGWN Program defines the scope and priorities of the scientific activities carried out under this MoA. The IR1 observing run is the main target of this version of the Program.
2. The Program addresses a comprehensive set of scientific targets, including improvements to the IGWN detector network as well as the following observational science targets, reported through alerts, catalogs, and/or publications:
 - (a) gravitational waves emitted by coalescing compact binaries, and their astrophysical, cosmological, and fundamental-physics properties;
 - (b) searches for unmodelled transient gravitational-wave signals;
 - (c) gravitational waves associated with known astronomical transients;
 - (d) continuous gravitational waves emitted by previously unknown non-axisymmetric neutron stars and other unknown sources;
 - (e) continuous gravitational waves emitted by known pulsars and other promising sources;
 - (f) searches for astrophysical and cosmological gravitational-wave backgrounds; and
 - (g) searches for dark-matter candidates.
3. The Program is tracked and delivered in the form of a Work Breakdown Structure (WBS) on the Gravitational-wave Resource Allocation and Science Planning site. GRASP manages the **Live version of the IGWN Program** as well as periodically approved versions.

Future updates to the Program are managed by the PC, in consultation with Division and Working Group chairs as well as the FRAC, following a change control process which is

approved together with the program by each Collaboration according to their own governing structures.

4. The scope of IR1 papers included in the Program is limited to papers approved by the LSC, Virgo, and KAGRA Collaborations for the IR1 observing run, including exceptional event papers. Papers in preparation from the O4 run remain governed by the LVK MoA publication rules until completion (see main body, Section 14).

A.2 IGWN Science Responsibility Framework

5. Each task in the IGWN Program is assigned an **IGWN Science Responsibility (ISR) weight** ranging from zero to unity. The ISR weight of each task is set by the Program Committee in a manner that incentivises contributions that enable the bulk of the IGWN Program.
6. The complete ISR assignment and weighting for each task is maintained in GRASP. Static snapshots of the program are available at LIGO-M2600087, VIR-0287A-26, JGW-M2617294.
7. **ISR-contributions** have units of weighted hours-per-week, computed by multiplying the hours-per-week devoted to a task (averaged over a year) by the ISR weight of that task. ISR contributions are used to determine the credit that an IGWN member who carries out that task receives toward automatic authorship and group good-standing requirements (Annex B).
 - *Example:* spending 10 hours/week on a task with ISR weight 0.5 yields an ISR-contribution of 5 ISR-weighted hours/week.

A.3 Division and Working Group Structure in the Program

8. The Program is organized by Division. Each Division contains Working Groups and Committees, which in turn contain projects and tasks. The organizational structure of Divisions and Working Groups for the MoA period is defined in Annex C. Where discrepancies exist between the GRASP WBS and the Division Structure document, the Program Committee and the Implementation Committee will work to reconcile them.

9. The WBS structure on GRASP is the single source of truth for project and task definitions, timelines, dependencies, and ISR weights assignments.

A.4 Publication Plan for IR1

10. The IGWN Publication Plan for IR1 lists the papers that the Collaborations commit to publishing under this MoA. Each paper is assigned an ISR weight by the PC.
11. The IGWN Publication Plan for IR1 has been presented to the collaborations for approval. It may be updated by the PC in coordination with the Divisions and Working Groups. Updates are approved following a change control process which is approved together with the program by each Collaboration according to their own governing structures. The provisions governing the review and publication process are defined in Annex D.

A.5 Program Iteration Workflow

12. During the MoA period the PC coordinates an iterative review of the Program with the FRAC. Through this process, ISR weights and resource estimates may be adjusted to reflect updated resource availability and scientific priorities. The review cycle is coordinated by the PC and IIB, in consultation with the Working Group chairs, Division Chairs, and FRAC. The Program and any changes are approved by each Collaboration's governing body.

B Membership, Authorship, and ISR Framework

B.1 IGWN Groups

During the IGWN MoA period, each institutional group remains a member Group of either the LSC, Virgo, or KAGRA. While the group good standing requirements are aligned as described in this section, each Group is governed and represented by the Collaboration to which it belongs.

B.1.1 Group Good Standing

1. To be in good standing during the MoA period, a Group must either :
 - (a) qualify as a legacy group of one of the collaborations, as set out in Section 7, paragraph 27.
 - or
 - (b) make collective ISR-contributions of at least $7 \times N$ weighted hours/week, where N is the number of Group members excluding undergraduates, non-author students, non-author administrative staff, non-author technical staff, and non-author emeritus members
2. Each Group must have an approved annual Work Plan as described in Section B.1.2.
3. Each Group has the responsibility and obligation to share openly and regularly with the Consortium their research efforts related to the IGWN Program, which includes data, software, analysis results, hardware designs, and any other results or products within the scope of the IGWN Program. All members of a Group share these responsibilities.
4. Each Group pays membership fees or makes equivalent in-kind contributions following the rules set by the respective Collaborations.
5. The Collaborations acknowledge that the impact of the ISR framework and group good-standing requirements on groups of different sizes and institutional types remains to be fully evaluated. During the MoA period, the IIB, together with the PC, the FRAC, and the governing bodies of the three Collaborations, shall assess and report on these impacts, with particular attention to smaller Groups and Groups at primarily teaching-focused institutions, and

shall develop recommendations regarding any adjustments that may be warranted before adoption of the full IGWN Consortium governance framework.

B.1.2 Work Plan Pledges and the IGWN Program

6. Each Group will submit an **IGWN Work Plan** pledging its contributions to IGWN activities for the MoA period. The Work Plan will describe the tasks in the IGWN Program that each Group commits to carrying out, expressed in ISR-weighted hours.
7. Work Plans for the MoA period must be finalized no later than **November 1st 2026**. They will be reviewed annually thereafter, as described in Section B.1.3.
8. The Group's member roster, listing all Group members, their position, their ongoing level of effort, and their institutional affiliation, is maintained by the Group's Principal Investigator and updated in conjunction with each Work Plan review.
9. The intellectual property and licensing obligations of each Group are defined by the rules set by their respective Collaboration.

B.1.3 Work Plan Review

10. Each Group will report annually on progress made against the pledges in their IGWN Work Plan. The review will be called and coordinated by the IIB.
11. The GRASP system is expected to support verification of delivered contributions in addition to pledged contributions.
12. The outcome of the review will be reported to the IIB and group PI. The IGWN Work Plan will be assessed as one of:
 - *Satisfactory*
 - *Satisfactory with minor concerns*
 - *Not satisfactory — major concerns*
13. If the outcome is *satisfactory*, the IGWN Work Plan and report are recorded as approved.

14. If the outcome is *satisfactory with minor concerns*, the IGWN Work Plan and report are recorded as approved, with the concerns documented in the review record.
15. If the outcome is *not satisfactory*, the Work Plan and report are recorded accordingly; feedback will be provided to the Group PI.
16. When the outcome is non-satisfactory the Collaboration's leadership and governing body will determine the appropriate steps to address the issue.

B.2 Individual Members

All individuals working together under the collaborative framework of this MoA must be members of LSC, Virgo or KAGRA Groups; there is no IGWN membership status except through membership in one of the three Collaborations.

B.2.1 Rights and Responsibilities of Individual Members

17. **Access to data.** All members of the three Collaborations will have free and equal access to any IGWN detector data taken during the MoA period, provided that they abide by the rules for the use, distribution, and publication of results from detector data set out in this MoA and its annexes. Members who intend to analyse data to extract observational results or study the detectors will do so by joining, participating in, and coordinating with the appropriate IGWN Working Group.
18. **Professional conduct.** Members are required to uphold the LVK code of conduct, as outlined in Section 11.
19. **Proprietary Data.** Members are required to respect the proprietary data period, as described in Sections 8 and 9.
20. **Digital Infrastructure.** Members shall adhere to the IGWN DI policies, as set out in Section E.3.

B.2.2 Automatic Authorship

21. All members listed on the LVK author list as of **August 2026** qualify for **Transitional Automatic Authorship** and are automatically included as authors of observational papers based on IR1 data, as described in Section 7, paragraph 29..
22. Members who do not qualify for transitional automatic authorship may earn the right to **automatic authorship** on all IGWN-wide publications through substantial contributions to the IGWN Program.
 - (a) A Member earns automatic authorship if, in the preceding year, they made an ISR-contribution equal to or greater than 40% of their research time (in units of hours per week), subject to a floor of 7 hours per week: the required contribution is whichever of the two is higher.
 - (b) A member of the LIGO Scientific Collaboration, Virgo Collaboration, or KAGRA Collaboration who has contributed to the scientific program of one or more of these Collaborations, who has retired, and who no longer actively contributes, may apply for **Emeritus Member** status, according to the rules of the relevant Collaboration. An Emeritus Member may petition their member Collaboration for the status of **Legacy Author** and be exempted from the ISR-contribution requirement.
 - (c) If a member has made substantial ISR-contributions but their contributions have fallen below the threshold due to extenuating circumstances (medical leave, parental leave, or equivalent), the member may request an exemption according to the rules of the relevant Collaboration.
 - (d) An author who leaves IGWN with automatic-author status retains automatic authorship for **one year**. This right does not grant access to confidential internal information prior to publication; a mechanism will be provided to access publications near their final circulation stage, to allow for appropriate review and acceptance or rejection of authorship.
23. A member granted automatic authorship has the right to **opt-out** of the automatic-author list

or of the author list of a specific paper, by following the procedure described in the relevant Collaboration's policies. IGWN is obliged to honour all such requests.

B.2.3 Petition for Authorship

24. IGWN members may **petition** for authorship on any IGWN-wide paper to which they have made substantial intellectual contributions, regardless of whether they qualify for automatic authorship under Section B.2.2.
25. The list of authors admitted by petition for each paper is approved by the Joint IGWN Executive Committee (see main body, Section 4.2) upon recommendation of the Chair of the IGWN Editorial Committee.

C Division and Working Group Structure during the IGWN MoA

The structure of the collaborations during the IGWN MoA period is summarized in Figure 1. This Annex provides the details of the joint divisions and working groups which will operate. The structure defined in this document will be effective as soon as the IGWN MoA is signed and for the duration of the MoA. Post-IR1, a post-mortem will evaluate the “MoA IGWN” structure’s effectiveness, with findings provided to the IIB for consideration in refining the final IGWN framework and informing the next transition.

The majority of existing LVK groups and divisions map closely to the structure described in this MoA. A list of groups and their mirrored counterparts is provided in specific subsections of this Annex. During the MoA period, groups which have a clear counterpart under IGWN will function according to the following principles.

1. LVK chairs in office at the time of the IGWN MoA signature will be invited to stay in their roles and also take the mirroring roles in IGWN until their term.
2. Division chairs can request additional division chairs if needed, pending agreement of the LSC, Virgo and KAGRA spokespeople.
3. Division chairs, with the approval of LSC, Virgo and KAGRA spokespeople, may decide on a different optimal number of chairs for each working group during the MoA period than is described in the IGWN Division structure below.
4. In the absence of any special request from Division chairs, the following applies.
 - When a working group or committee chair’s term is over, the replacement procedure will follow the IGWN rules described in this Annex, for what concerns election/appointment procedures, but also in general for the total number of chairs.
 - Elected roles will be elected jointly by all collaborations.
 - Roles that are appointed by division chairs will be appointed jointly by the division chairs of the three collaborations.
 - Roles that are appointed by the spokespersons will be appointed jointly by the LSC, Virgo and KAGRA spokespeople and deputies.

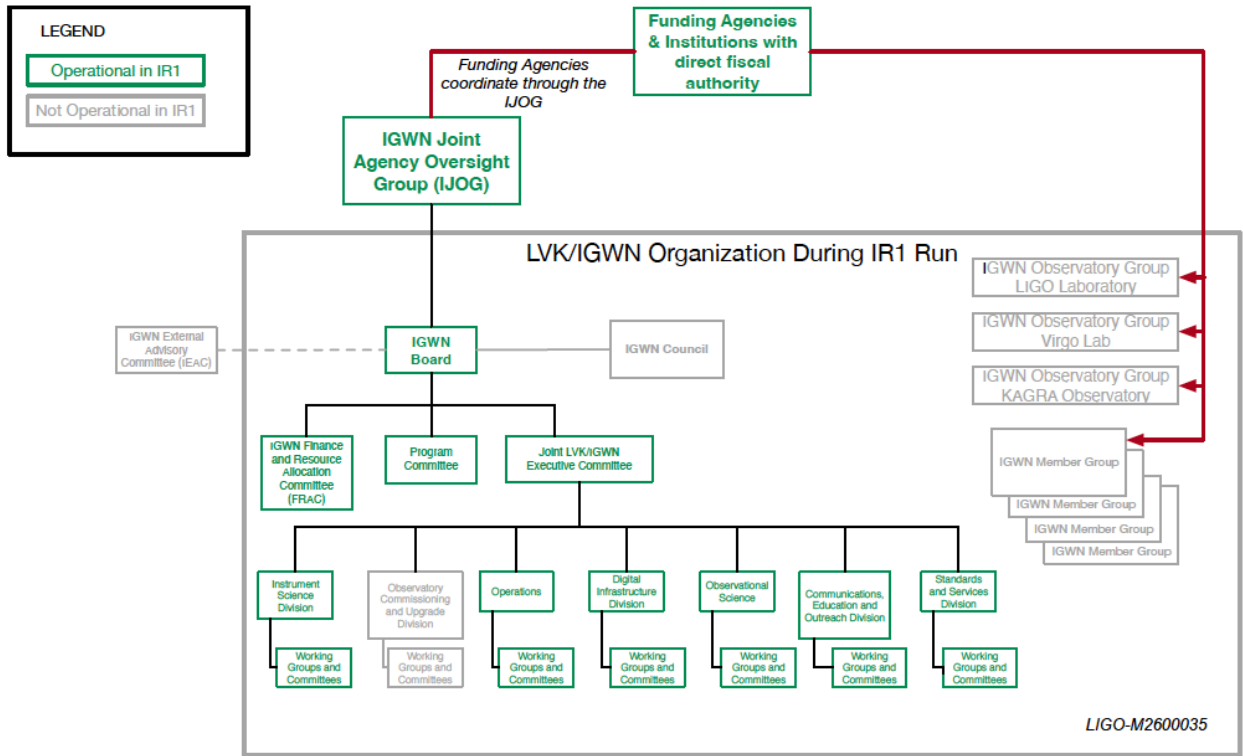


Figure 1: Collaboration structure during the IGWN MoA. The green boxes show the structure during the MoA period, while gray boxes indicate structures that are planned to be established for the IGWN Consortium.

- If there are more LVK chairs than IGWN chairs then no replacement will be made until the number of remaining chairs is equal to the IGWN number.
- Where there are more IGWN chairs than LVK chairs for a mirrored role, election or appointment will happen within 3 months of the signature of the IGWN MoA.
- If a current chair chooses not to take on the mirroring role, their term will end in December 2026 and a new chair will be elected or appointed by that time.

C.1 Divisions, Working groups and committees

C.1.1 Divisions

5. The Collaborations are divided into several divisions, each of which covers a broad program area. New divisions can be formed, or existing divisions updated or dissolved, by updating this MoA, through approval of the three collaboration governing bodies.
6. Changes to a Division's structure or policies will be reviewed by the Joint IGWN Executive Committee (JEC) and then brought to the three collaborations' governing bodies for approval through a vote.
7. During the IGWN MoA the divisions are:
 - Instrument Science
 - Observational Science
 - Operations
 - Digital Infrastructure
 - Standards and Services
 - Communications, Education and Outreach
8. Unless specified differently below, each division will have three chairs, one from each of the LSC, Virgo, and KAGRA collaborations, appointed according to the processes outlined in each collaboration's bylaws. In representative venues, such as the JEC, the chairs may rotate the responsibility.
9. A Division is divided into Working Groups and Committees focusing on specific areas of its remit. The composition of Committees and Working Groups are described below.
10. The Division Chairs are responsible for coordinating, overseeing, and reviewing the scientific research and supporting activities within their Division. Regular meetings of the Division will be open to the entire IGWN membership, and will be used to coordinate and consult among the working group and committee chairs, including the Division's contributions to the program, and to handle any other relevant business.

11. Each Division will have a Steering Committee, including at least the Division Chairs, Chairs of each Working Group and Committee, and Review Chairs associated with the work of the Division. The Division Chairs may call meetings limited to the Division Steering Committee.
12. IGWN matters relating to the responsibilities of the Division may be decided by consensus or, at the discretion of the Division Chairs, by a vote of the Division Steering Committee.

C.1.2 Working Groups

13. IGWN activities are carried out by Working Groups. Each Working Group belongs to a specific Division and is open to all members of the LSC, Virgo and KAGRA. Working Groups are created as needed to allow members to address specific needs and interests of the collaborations; new Working Groups are proposed to the JEC and voted on by the three collaborations' governing bodies.
14. Apart from the election or appointment of their Chairs, which is specified below, Working Groups may determine their internal decision-making processes (voting, consensus, etc.).
15. Working Groups may establish subgroups in consultation with their Division Chairs.

C.1.3 Committees

16. A Committee has defined membership with at least one Chair. The Program Committee (PC), FRAC and Observatory Network Run Coordination Committee (ONRCC) are defined in the body of the MoA. Other Committees are defined in this Annex and form part of a specific IGWN Division.

C.1.4 Cross Division Projects

17. Cross-Division projects are coordinated efforts whose scope spans two or more IGWN Divisions and that require active management to meet time-critical deliverables.
18. Each cross-Division project is described in this Annex and charged by the JEC.
19. During the IGWN MoA the cross division projects are:
 - Rapid Alerts Project (see section C.8)

- Gravitational Wave Transient Catalog Project (see section C.9)
20. Project coordination is ensured by a Project Manager, a Project Scientist and a project steering committee.
 21. The Project Manager is responsible for assigning tasks, tracking progress, coordinating with relevant Divisions, and reporting to the JEC.
 22. The Project Scientist provides a clear vision of the project, manages and prioritizes the project tasks and deliverables, ensures the team understands tasks and works on them in prioritized order, and provides feedback on deliverables.
 23. The Project Manager and scientist will develop a detailed written charge and timeline of the project and submit it to the JEC for approval.
 24. The Project steering committee is composed by the Project Manager, Project Scientist, representatives from all Working Groups involved in the project, and liaisons to other projects or committees, depending on the project scope. The composition of the steering committee is proposed in the Project written charge and approved by the JEC.
 25. The Project Manager and scientist will contact relevant Divisions and WG chairs to ask for nominations of liaisons for the Steering Committee, then will propose a list of names to the JEC for approval.
 26. The Project Manager is in charge of organising regular meetings of the steering committee, ensuring the information flow and dissemination by all means (in the most inclusive possible ways considering members time zones and circumstances).
 27. Each Working Group representative shall participate fully in the Project, represent their Working Group in the decision making process, and ensure timely, two-way communication between the Working Group and Project.
 28. Strategic decisions within the project are discussed openly and timely within the steering committee.

- The Project Manager and scientist will strive for consensus on decisions. If a consensus is not reached, the final decision-making power lies with the Project Manager and/or Project Scientist, depending on the nature of the decision (to be outlined in the specific project charge approved by the JEC).
- The Project Manager or scientist can decide to escalate specific decisions to the JEC in case of particularly controversial topics, or aspects that significantly impact the IGWN image within the broader scientific community.
- The escalation to the JEC can also be triggered by a request from more than two-thirds of the project steering committee.
- Decisions made by a project Steering Committee are binding on all relevant Working Groups within the scope defined by the project charge.

C.2 Instrument Science Division

29. The IGWN Instrument Science Division will act as a common forum for IGWN-wide discussions, without disrupting current organisation in the LSC, Virgo and KAGRA collaborations.
30. The chairs of the division are encouraged to animate a common dialogue during the MoA period, with the scope of defining how the Instrument Science Division will operate in the IGWN Consortium.
31. By January 2027, the Instrument Science division chairs will report to the LSC, Virgo and KAGRA collaborations governing bodies with the status and proposals for a path forward for the rest of the MoA period and in perspective for the IGWN Consortium.
32. The division's activities will be coordinated by the following Working Groups:
 - Vacuum and Cryogenics
 - Lasers, Actuators and Sensors for Interferometry, Controls schemes and Simulations
 - Optics
 - Suspensions and Seismic Isolation
33. Each working group will have at least one chair per collaboration, appointed or elected based on the bylaws of each collaboration.

34. Where the group does not already exist in a given collaboration, a chair will be appointed by the LSC, Virgo and KAGRA spokespeople within 1 month of the MoA signature date.
35. Where an IGWN group is the result of a merger of different working groups in any of the L, V or K collaboration, the Divisions chairs will define the pertinent number of chairs, in consultation with the concerned working group chairs.
36. The members of the Instrument Science Division Steering Committee are the Chair and Deputies of the Division, the Program Manager, the Virgo upgrade and R&D coordinators, LIGO Chief Scientist and System Engineering Lead, KAGRA equivalents, IGWN Instrument Science Working Group chairs.
37. The Instrument Science Division Steering Committee will prepare and maintain on an annual basis a White Paper describing the instrument science research activities for the current IGWN detectors, planned detector upgrades, and future detectors.
38. IGWN Instrument Science Working Groups may establish sub-groups within the working group. Any sub-groups jointly created by two or more top-level groups should designate and report through a primary Instrument Science Group.
39. Instrument Science Working Groups may bring a full authorship publication forward for review.

C.3 Observational Science Division

40. The Observational Science Division is responsible for coordinating, overseeing, and reviewing observational science work. As an exception, the GWTC and low-latency alerts are managed via cross-division projects, though the division maintains involvement through steering-committee representation.
41. The Observational Science Division is divided into Observational Science Working Groups focusing on specific areas of gravitational-wave science. The chairs of the Working Groups are elected.
42. The division's activities will be coordinated by the following Working Groups:

- Burst Working Group
 - Gravitational-Wave Backgrounds and Early Universe Working Group
 - Continuous Waves Working Group
 - Transient Searches Working Group
 - Transient Multi-messenger astronomy working group
 - Compact Binary Coalescence (CBC) Parameter Estimation Working Group
 - Cosmology with CBCs Observations Working Group
 - CBC Populations Working group
 - Nuclear Physics with CBCs Working Group
 - Gravitational Lensing with CBCs Working Group
 - Gravitational CBC Waveform Modelling Working Group
 - Fundamental Gravitational Physics with CBCs working group
43. The scientific scope of each working group is not expected to change for IR1 with respect to the one they had in the LVK during O4. Discussions of how WG scopes and boundaries will evolve towards the IGWN Consortium will happen during the MoA period.
44. Observational Science Working Groups may establish sub-groups within the working group. Any sub-groups jointly created by two or more Working Groups should designate and report through a primary Observational Science Working Group.
45. Observational Science Working Groups carry the principal responsibility for writing scientific papers that report the results of their analyses.
46. The Observational Science Division will include three committees:
- Transient Exceptional Event Committee
 - New CBC detection committee
 - CW first detection review committee
47. In addition Observational Science Working groups will make significant contributions to two cross division projects: the Gravitational Wave Transient Catalog and Rapid Alerts Projects.

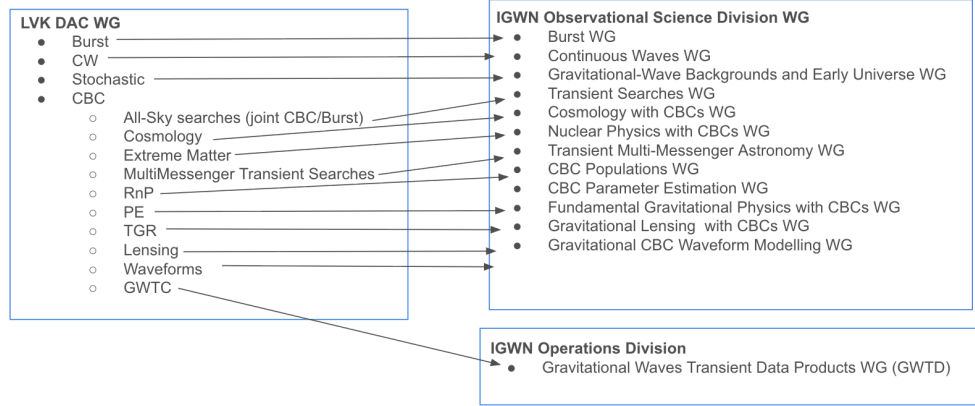


Figure 2: The evolution of the Observational Science Division from the LVK to IGWN MoA. The arrows indicate a transition of activities and chairs between the LVK WGs and the IGWN working groups, for the Observational Science division.

48. The biggest change to the Observational Science division during the IGWN MOA period is the promotion of CBC subgroups to become full working groups, and the retirement of the CBC group as shown in Figure 2.

49. The CBC group and CBC chairs were previously responsible for coordinating major aspects of observational science, including the Gravitational Wave Transient Catalog (GWTC), and the handling of exceptional events. A proposed plan for redistributing these responsibilities during IR1 follows.

- During the IGWN MoA period, the CBC subgroups will formally be recognised as working groups from the date of the IGWN MoA signature, and will function as full working groups within the observational science division. These groups will report directly to the Observational Science division chairs, contributing to the IGWN Program, and the formation of IR1 paper writing teams for approved publications which are recognised as being fully under their group's remit (in consultation with the Observational Science chairs).
- The CBC chairs will remain in post until the end of December 2026, but with reduced responsibilities from the date of signature of the IGWN MoA. Responsibility for the delivery of GWTC-6 focus issue publications (limited to the Introduction, Methods and Results papers) remains with the CBC chairs until the end of December 2026. Respon-

sibility for the delivery of other O4c papers formally transitions to the WGs at the time of the signature of the IGWN MoA, with guidance from both the LVK CBC and DAC chairs. In December 2026, oversight of the GWTC-6 focus issue papers (Introduction, Methods and Results) will formally transition to the Observational Science chairs.

50. With the aim of avoiding meeting proliferation, meetings will have an “O4” and an “IR1” part of the agenda, rather than duplicate meetings, unless there is a strong reason for separating the two.
51. Additional suggestions of how CBC-related meetings and calls may evolve during the MoA are included in LIGO-M2600212.
52. The Observational Science Division chairs will make sure that the activities related to the searches and characterisation of GW signals other than modelled transient ones receive the needed level of coordination efforts, as well as internal and external visibility and recognition.

C.3.1 Transient Exceptional Event Committee

53. During the MOA period a transient exceptional event committee will be formed, for the duration of the IR1 observation and data analysis, dedicated to the swift identification, handling and follow up of exceptional events. This committee will have one chair (appointed by the LSC, Virgo and KAGRA spokespeople), and will be composed of representatives from each Observational Science working group, and a representative from the Communications, Education and Outreach Media Relations Coordination Committee.
54. Committee charge
 - Identify exceptional events through collection of input from the collaboration members.
 - Hold regular open calls to collect and discuss the input
 - Call for the formation of associated Science Case Study Teams, with a clear timeline for reaching a recommendation (IGWN publication or not)
 - Define the Science Case Study Team composition

- The Observational Science division chairs have the authority to decide if to accept or not the recommendation.
- In the case that the recommendation is to pursue a publication, the recommendation must include the list of key contributing WGs. If the recommendation is accepted, this information will be used by the Observational science division chairs when forming the Paper Writing Team (PWT).

C.3.2 New CBC detection review committee

55. During the IGWN MoA period a New CBC detection review committee will be formed, for the duration of the IR1 observation and data analysis, dedicated to the review and scrutiny of any new CBC detection claim.
56. A new detection claim is considered to be either a newly observed class of CBC, such as a sub-solar mass merger, or previously unidentified features in a signal such as non-GR effects, lensing or neutron star structure.

C.3.3 CW first detection review committee

57. During the IGWN MoA period a CW first detection review committee will be formed, for the duration of the IR1 observation and data analysis, dedicated to the review and scrutiny of any claim of a detection of a GW signal from continuous waves.

C.4 Operations Division

58. The scope of the IGWN Operations Division is to organize and manage all activities related to, and necessary for, observatory network operation.
59. The Operations Division is organized into Working Groups. The co-chairs of the Working Groups are appointed.
60. Operations decisions will be made by majority vote, excluding abstentions, of the chairs of the working groups, including the votes of the Division Chairs. All decisions that are voted on will be recorded in 'Record of Decision Agreement' (RODA).

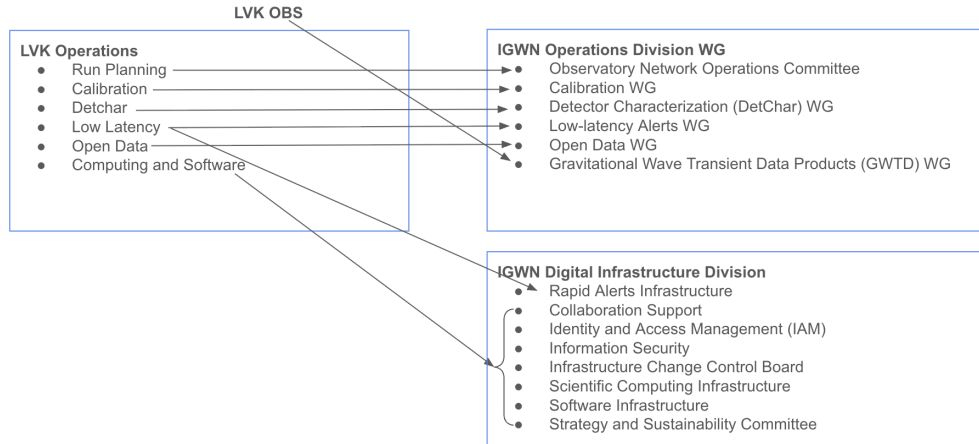


Figure 3: The evolution of the Operations Division Working groups from the LVK to IGWN MoA. The arrows indicate transition of activities (and, where applicable, chairs) between the LVK WGs and the IGWN working groups, for the Operations division.

61. The division's activities will be coordinated by the following working groups:

- The Observatory Network Run Coordination Committee (ONRCC)
- Calibration Working Group
- DetChar Working Group
- Low latency alerts working group
- Open data working group
- Gravitational Wave Transients Data Products Working group

62. All LVK Operations division Working Groups continue to operate under the LVK MoA, as shown in Figure 3, with the exception of Computing, which is promoted to the DI division.

63. In addition, Operations Working groups will make significant contributions to two new cross division projects: the Gravitational Wave Transient Catalog and Rapid Alerts Projects.

64. The Rapid Response Team (RRT) will be organised in continuity with what was planned by the LVK RRT team, i.e. according to the userguide (<https://emfollow.docs.ligo.org/followup-advocate-guide>) and similarly to O4 (including region-specific organisational aspects), with as much automation as made possible by the ongoing developments.

C.5 Digital Infrastructure Division

65. The Digital Infrastructure (DI) Division is responsible for organizing, documenting, and planning the IGWN Digital Infrastructure.
66. The mission of the Digital Infrastructure Division is to provide, operate, and support the shared digital services needed for IGWN scientific and organizational activities, including computing, storage, networking, security, identity and access management, data-management, and software-infrastructure services.
67. The scope of the DI Division excludes:
 - (a) digital infrastructure operated for individual IGWN member groups or institutions, including observatory groups;
 - (b) observatory control, control room, and data acquisition systems up to and including the data concentrator;
 - (c) development and operations of pipelines, data products, and services where primary responsibility lies with other Divisions; where such activities depend on shared IGWN digital services or platforms, the DI Division is responsible for those common services or platforms, but not for the activity-specific applications that run on them.
68. The DI Division will have 1 chair and 3 deputy chairs, appointed by the LSC, Virgo and KAGRA Spokespeople.
69. The DI Division is organized into Working Groups. The co-chairs of the Working Groups are appointed.
70. The activities will be coordinated by the following Working Groups
 - Identity and Access Management Working Group
 - Collaboration Services Working Group
 - Rapid Alert Infrastructure Working Group
 - Scientific Computing Infrastructure Working Group
 - Software Infrastructure Working Group

71. In addition, the following committees will operate:

- Information Security Committee
- Infrastructure Change Control Board
- Strategy and Sustainability Committee

72. By January 2027, the Digital Infrastructure division chairs will report to the LSC, Virgo and KAGRA collaborations governing bodies with the status and proposals for a path forward for the rest of the MoA period and in perspective for the IGWN Consortium.

C.6 Communications, Education and Outreach Division

73. The Communications, Education and Outreach (CEO) Division is responsible for overseeing and documenting the Collaborations' activities in education and public outreach. The CEO Division is also responsible for formulating the Collaborations' strategic plans to harness the excitement and enthusiasm generated by gravitational wave research in order to inspire and educate students and the general public in astronomy and fundamental science.

74. The CEO Division is organized into Working Groups and Committees. The co-chairs of the Working Groups and Committees are appointed.

75. The Working groups in the CEO Division are:

- Media Relations Coordination Committee
- Education Working Group
- Outreach Working Group
- Translation Working Group
- IGWN Web Working Group
- IGWN Magazine Committee

76. The members of the CEO Division Steering Committee are the Division Chairs and the chairs of each Working Group or Committee listed below, a representative from each of the observatories, and representatives from each of the observatory group media relations offices.

77. The CEO Division Steering Committee mission covers a spread of interests and expertise in formal and informal education, media relations, and public and professional outreach.

78. The CEO Division develops press releases on behalf of the collaborations and coordinates IGWN press conference events. The IGWN Inaugural Board will give final approval of these press releases and events.
79. The CEO Division coordinates the projects and wider outreach efforts undertaken across the IGWN through its standing committees.
80. During the IGWN MoA period, the CEO Division will build upon the joint activities of the L, V, and K outreach teams—already collaborating — focusing on increasing global coordination and addressing known organizational issues without disruptive changes. The MOA period will be used as a pathfinder to explore, implement changes in stages, and converge toward a unified division. By January 2027, the Communication, Education and Outreach division chairs will report to the LSC, Virgo and KAGRA collaborations governing bodies with the status and proposals for a path forward for the rest of the MoA period and in perspective for the IGWN Consortium.

C.7 Standards and Services Division

81. The Standards and Services Division addresses tasks and topics related to the climate within IGWN, equitable share of visibility, collaboration organization issues, and administrative functions.
82. For all appointed positions within this Division, the following standard appointment process applies unless stated otherwise. For chair appointments, the Division Chairs shall issue an open call for nominations, consult the outgoing chair, and forward a ranked recommendation to the Spokespeople for approval prior to appointment. For member appointments made by a committee chair, the chair shall similarly issue an open call for nominations, forward ranked recommendations to the Division Chairs, who endorses and passes them to the Spokespeople for approval prior to appointment.
83. The Standards and Services Division will comprise the following Committees:
 - Diversity, Equity and Inclusion Committee
 - Early Career Scientists Forum

- Early-Career Advisory Committee
- Meetings Committee
- Climate Change and Sustainability Committee
- Election and Nominations Committee
- Member and Author Committee
- Speakers Committee
- Awards and Fellowships Committee
- Editorial Committee
- Standards and Conduct Committee

84. IGWN committees will have at least one chair from each collaboration. People already in charge of equivalent committees will be encouraged to take over the mirroring role.
85. Unless otherwise stated, the chairs of the Standards and Services Division Committees are appointed.
86. The chairs of the Climate Change and Sustainability Committee are elected.
87. In the areas of Standards and Conduct, Editorial Board and Speakers, the existing LVK committees are charged to work towards merging operations.
88. The current LVK Meetings Committee will operate as the IGWN Meetings Committee.
89. The L, V and K Climate Change and Sustainability committees will operate jointly as the IGWN Climate Change and Sustainability Committee.
90. The Diversity, Equity, Inclusion (DEI) existing L, V and K committees will operate jointly as Diversity, Equity, Inclusion Committee.
91. The early career members of the existing LAAC, VECS and KAGRA EC committees will operate jointly as steering committee of the IGWN Early Career Scientists Forum (ECSF).
92. Each collaboration will designate three members (each one senior, one PhD and one postdoc representatives) to create a first seed of the Early-Career Advisory Committee (ECAC) council. The ECAC is requested to propose a list of offices to the IGWN Inaugural Board within 3 months of the MoA signature.

93. By January 2027, the Standards and Services division chairs will report to the LSC, Virgo and KAGRA collaborations governing bodies with the status and proposals for a path forward for the rest of the MoA period and in perspective for the IGWN Consortium.

C.7.1 Early Career Scientists Forum

94. The IGWN Early Career Scientists Forum (ECSF) is a standing body within the framework of the IGWN MoA. It represents and protects the interests of Early Career Scientists (ECSs). This includes graduate students, doctoral candidates, postdoctoral researchers, and junior staff. Members may also self-identify as ECSs. All ECSF members are included in the ECS community and mailing list upon joining the one of the Collaborations. The mailing list shall serve as the official communication channel for elections and community-wide announcements.
95. The ECSF shall be led by a steering committee elected by the ECS community. Given the temporary nature of ECSs appointments, terms shall last one year, with a six-month overlap period with the incoming member to ensure continuity. Members may stand for at most one consecutive re-election. The ECSF steering committee shall include:
- One graduate student and one postdoctoral researcher from each of the L, V, and K collaborations will serve as ECS Representatives to their respective collaboration governing bodies.;
 - ECSF steering committee selects a Chair and co-Chair among its members.
96. In addition, one senior IGWN member will serve the ECSF acting as external adviser to the steering committee. The senior external advisor will be appointed by the LSC, Virgo and KAGRA Spokespeople for a term of two years and shall receive the endorsement of the collaborations governing bodies.
97. IGWN ECS Chairs are responsible for organising regular collaboration-wide meetings, open exclusively to early career members. During these meetings, the chairs provide updates on relevant developments within the collaboration, and the ECS representatives to the Collaboration governing bodies will report on past and upcoming meetings. The ECS board also

solicits feedback from the community to ensure that early career perspectives are represented in discussions with relevant governing bodies Collaborations.

C.7.2 Early-Career Advisory Committee

98. IGWN ECAC is responsible for overseeing and documenting the Collaboration's activities in support, education and training of ECSs within the Collaboration.
99. ECAC is composed of the ECAC council and working groups (offices) dedicated to specific activities of the ECAC. ECAC council consists of elected senior, PhD and postdoc representatives and 3 chairs, representing L, V and K. The term of each member is 2 years, terms are staggered, and elections are held annually, with members eligible for reelection.
100. Offices are established by the ECAC council, and office members are volunteers approved by the council for a 1-year term. Each office has an office coordinator, appointed by the ECAC council from the office members. Coordinators report regularly to the ECAC council and are tasked with tracking and documenting the contributions of the office members. Each office has a ECAC council member in it.
101. The ECAC is responsible for organizing the early career activities at the IGWN Meetings, including the poster sessions and social events.
102. The ECAC is responsible for the recognition program, ensuring that the collaboration contributions of each member are adequately and officially recognized.
103. The ECAC is responsible for the thesis database, maintaining the ordered list of all previous and current theses.
104. The ECAC oversees the mentoring program, offering collaboration members the opportunity to connect with mentors for guidance on any relevant questions or topics.

C.8 Rapid Alerts Project

105. The Rapid Alert Project (RAP) is a Cross-Division Project to deliver low-latency gravitational-wave alerts. The scope of the RAP includes calibration, data transfer, low-latency alert infras-

tructure (GWCelery), low-latency search pipelines, data quality and annotation pipelines, and low-latency parameter estimation.

106. Duration of the project: coincides with IR1 observation time
107. The project will be led by a Project Scientist and Project Manager appointed by the IGWN Inaugural Board
108. The following working groups are actively involved in the project and will be represented in the steering committee:
 - Calibration Working Group [Operations Division]
 - Detector Characterization Working Group [Operations Division]
 - Rapid Response Team [Operations Division]
 - Transient Searches [Observational Science Division]
 - CBC Parameter Estimation [Observational Science Division]
 - Transient Multi-messenger astronomy working group [Observational Science Division]
 - Low Latency Alerts - name to be adjusted [Operations Division]
 - Rapid Alert Infrastructure Working Group [DI Division]
 - Scientific Computing Infrastructure Working Group [DI Division]
109. The following will also be steering committee members
 - One Operations Division chair
 - One Observational Science Division chair
 - One DI Division chair
 - The IGWN CISO, or a representative designated by the CISO
 - One liaison to the GWTC Project
110. Deadline for proposing names for the steering committee to the Joint IGWN Executive Committee: end of September 2026
111. During the IGWN MoA period, all WGs will be in charge of deliverables as they were in O4 (for example: triggers generation will be a responsibility of the Observational Science / All-sky searches WG, while events aggregation will be a responsibility of the Operations/Low

Latency WG)

112. The main change in the WGs structure is that the activities now living in the Operations/Low Latency WG that pertain to Low Latency infrastructure will move to a newly formed Low Latency Infrastructure group under the DI Division
113. For IR1 we focus on changing the coordination structure of Low-Latency alerts through the cross-division project instrument: empowering the Project Manager and Scientist to streamline reporting and decision-making and ensuring communication and effectiveness through the steering committee.

C.9 Gravitational Wave Transient Catalog Project

114. The Gravitational Wave Transient Catalog (GWTC) cross-division project will start at the beginning of IR1 observation, and continue until the publication of GWTC-7.
115. The charge of this project is to: define the timeline for the delivery of GWTC-7 data products for use by downstream users and public release; Coordinate activities, facilitate communication, and ultimately deliver the complete GWTC-7 data products included in the Introduction, Methods and Results papers.
116. The project is charged with disseminating the data products that critically enable downstream GWTC-7 papers contained in the IR1 publication plan.
117. The project coordinates the editing of the associated papers, according to the general collaboration rules and in contact with the Observational Science Division chairs and Editorial Board.
118. In order to be minimally disruptive, during the IGWN MOA period Working Groups remain responsible for the delivery of their data products for the GWTC, similarly to what was done in O4.
119. The project will be led by a Project Scientist and Project Manager appointed by the IGWN Inaugural Board

120. The following working groups are actively involved in the project and will be represented in the steering committee:

- Burst Working Group [Observational Science Division]
- Transient Searches Working Group [Observational Science Division]
- CBC Parameter Estimation Working Group [Observational Science Division]
- Gravitational CBC Waveform Modelling Working Group [Observational Science Division]
- Calibration Working Group [Operations Division]
- Detector Characterization Working Group [Operations Division]
- Open data working group [Operations Division]
- Gravitational Wave Transients Data Products Working group [Operations Division]

121. The representatives should be people who are directly involved in the delivery of these data products, such that they can speak on these matters knowledgeably and reliably..

122. The following working groups from the Observational Science Division, which use the GWTC as a critical part of their input, will also be represented on the steering committee

- Cosmology with CBCs Observations Working Group
- CBC Populations Working group
- Nuclear Physics with CBCs Working Group
- Gravitational Lensing with CBCs Working Group
- Fundamental Gravitational Physics with CBCs working group
- Transient Multi-messenger astronomy working group

123. The following will also be steering committee members

- One Operations Division chair
- One Observational Science Division chair
- One DI Division chair
- One liaison to the Rapid Alerts Project
- One member of the Media Relations Committee.

124. Deadline for proposing names for the steering committee to the Joint IGWN Executive Committee: end of October 2026
125. The Project Manager and Scientist, after consultation with the steering committee, will propose a Paper Writing Team for the GWTC-7 focus issue (limited to Introduction, Methods and Results publications), for approval by the Observational Science division chairs. The Project Manager and Scientist are responsible for the timeline of the PWT establishment. The GWTC-7 focus issue PWT will report to the GWTC project before reporting to the Observational Science division.

D Data Sharing, Publications, and Dissemination Rules

This Annex provides details of data sharing, publications and dissemination for the IGWN MoA period. Organizational details (Division and Working Group structure, leadership, committee composition) are defined in Annex C.

D.1 IGWN Publication Plan of Observational Results

1. The IGWN Publication Plan lists the papers that the three Collaborations commit to publishing as IGWN papers. The Divisions and Working Groups are the point of origin for IGWN papers.
2. Proposals for IGWN papers are generated by Working Groups and discussed across the Observational Science Division. All paper proposals must be approved by all three Collaboration governing bodies in order to be adopted as IGWN papers. The same procedure is used to approve any changes to previously approved proposals, including removals of publications, mergers of publications, and new publications.
3. Standby papers are activated when the Observational Science Division Chairs determine that the activation criteria have been met.

D.2 Reviews

4. The IGWN publications include the results of analyses of gravitational-wave data, as well as studies on data quality, interpretations, and discussions. All of these elements will be critically reviewed before publication.
5. Reviews target the results as well as the software that produces the results and the scientific content of the associated paper. More precisely, the review process will ensure:
 - a. The accuracy and significance of reported results;
 - b. The identification and resolution of errors;
 - c. The reproducibility of results;
 - d. Proper documentation of analysis methods and intermediate steps;

- e. Adequate testing, vetting, and documentation of software tools;
 - f. Appropriate response to comments from members of the three Collaborations.
6. Two standing Review Chairs for each Working Group will be appointed by the Observational Science Chairs in consultation with the Chairs of that Working Group, chosen within the three Collaborations such that it reflects the broader membership. The Review Chairs will agree on the most effective means to ensure that the review goals are met in a timely manner, and report to the Working Group and Observational Science Division Chairs.
 7. Review Chairs should not hold positions of leadership or other major responsibility in the corresponding Division or Working Group.
 8. Once results are mature for review, according to procedures established within the Divisions and Working Groups, a Review Committee is established by the Review Chairs. The Review Committee is responsible for checking the validity of the analyses and the scientific results, encompassing the scope of a journal reviewer for scientific content but not style. When the paper reports several analyses the Review Committee composition should be adjusted accordingly and can be composed of several review teams.
 9. The overall review for stylistic quality and clarity of a publication is in the scope of the IGWN Editorial Committee.
 10. If a conflict of interest exists between the Review Chairs and the analysis leaders, the Observational Science Division Chairs appoint the Review Committee for that analysis, in consultation with the relevant Working Group Chairs, and the Review Committee reports to them. A conflict of interest is understood to be self-declared by the Review Chairs or the analysis leaders, based on personal, professional, or institutional relationships that could reasonably be seen to compromise the impartiality of the review, and any such declaration must be made before the Review Committee is constituted.
 11. Where feasible, all three Collaborations will be represented in the Review Committee membership; Review Committee membership should reflect the broader membership of the three Collaborations.

12. Review Committee members will include experts in gravitational-wave analysis and, if possible, people with a good understanding of the performance of the detectors whose data are used in the analysis.
13. Software that produces results included in a publication must be reviewed. Working group Review Chairs appoint standing review teams in charge of reviewing major pipelines or software libraries. For all the other software, standard review teams are appointed. The decision on the category of the Review Committee is at the discretion of the Review Chairs.
14. Any results must be reviewed and approved by the appropriate Review Committee before dissemination. The Review Committee reports any issue during the review process to the Working Group Review Chairs which approve the analysis results before dissemination.

D.3 Publication of Observational Results

15. For each approved paper, the relevant Working Group shall propose a Paper Writing Team to cover both the technical and editorial aspects of the paper. This Team should be formed no later than the commencement of the analysis for that paper. The composition of the team is reviewed by the Observational Science Division Chairs, adjusted and augmented as needed, to ensure that the right expertise in gravitational-wave science, data characterization, instruments, and writing is present in the team, and that the team is balanced, e.g., in participation of junior and senior scientists.
16. The Publication Plan website will be updated to list members of the Paper Writing Team and of the Review Committee (once appointed). Identification of human and material resources (e.g., computing) needed to bring the paper to fruition, including public bulk data release, data product release, and science summary preparation will be revised checking information in GRASP.
17. The existence of the project, the team membership, and a means to follow progress will be available on the corresponding Publication Plan entry. The Paper Writing Team is responsible for ensuring that the Publication Plan entry is kept up to date with at least weekly frequency, allowing all Collaboration members to track progress.

18. A detailed timeline of the significant steps for each paper and its linked papers (including activities such as data cleaning, calibration, computing, paper writing, and internal reviews), consistent with the overall publication planning, shall be established jointly by the Paper Writing Team and the relevant Working Group. This timeline shall be included in the Publication Plan entry. If milestones are significantly missed, a revised approach shall be established by the Division Chairs and the causes addressed as needed to put the paper back on track through adjustments of scope, writing team, etc.
19. Each Working Group will provide progress updates to the corresponding Division weekly. Any new proposals for publication of new results over the next six to twelve months will also be presented at that time.
20. After the Review Committee has approved the results and the IGWN Editorial Committee has assessed the quality of the paper, the paper will be presented to the three Collaborations for approval. Final paper approval by each Collaboration shall be according to its own governing procedures. In case of a conflict about the nature or timing of the dissemination of results, the issue will be referred to the IIB.
21. IGWN papers which are linked (e.g., because of the data they use) shall be released simultaneously whenever feasible, to avoid time-critical competition with external teams that may pursue the same result on open data.
22. To release all relevant papers simultaneously, staggering of reviews, delays in submission of completed papers, and reallocation of efforts may be needed and should be done only when necessary.
23. For all IGWN Observational Papers, appropriate associated data release products (e.g., 1 hour of gravitational strain data $h(t)$, data behind figures, posterior samples) must be defined, vetted, and made public when the paper is made public; and the paper's appearance in a science summary must be planned and prepared to be available when the paper is made public.
24. The review of all data release products, except the gravitational-wave strain, are under the responsibility of the paper's Review Committee. Strain data release is reviewed by the Open data Working Group Review team.

25. All software developed by the three Collaborations that is used in preparation of a Collaboration publication must be “open source” and available to general public no later than the first public release of the Collaboration paper itself (whether as a preprint or a journal publication). Here “open source” is defined as adhering to The Open Source Definition (<https://opensource.org/osd>). Exceptions to this policy may be granted at the discretion of the governing bodies of the three Collaborations.

D.4 Announcement of Discoveries

26. Joint claims of discoveries will follow these protocols for their announcement to the public:
 - a. Upon approval by the members of the three Collaborations, final authorization of the public announcement must be given by the signatories of this MoA or their designees.
 - b. Any press releases announcing a discovery will be prepared jointly (see Section C.6) and issued simultaneously by the three Collaborations. Each Collaboration release will make mention of other Collaboration releases, and official posting at each Collaboration web page will carry a pointer to the other Collaboration release.
 - c. Major discoveries will be announced jointly by the three Collaborations in press conferences.
 - d. Any other press releases pertaining to gravitational-wave searches or to any other collaborative work will be shared in advance by the CEO chairs with the IGWN leadership through the IIB to enable coordination if needed.

D.5 Dissemination of Observational Results

Dissemination refers to communication outside the three Collaborations of gravitational-wave Observational Results and of results from supporting activities. In this context, dissemination includes presentations at conferences, conference proceedings, papers posted on ArXiv or any other public archive, notes in any journal (peer-reviewed or otherwise), press releases or press interviews, and any web page accessible without authorized Collaboration credentials.

27. Regarding public presentations or discussions (e.g., at conferences open to non-Collaboration researchers):

- a. To allow timely preparation and review, all planned talks or other verbal dissemination where a new result is first presented must be announced sufficiently in advance to allow the IGWN Speakers Committee to coordinate approval and review of presentations. Presentation slides will be made available to members of the three Collaborations so that others can provide feedback.
 - b. A talk presenting new IGWN results prior to formal publication is only possible if the paper's Review Committee explicitly approves the presentation of those preliminary results. The talk slides must be approved by a reviewer appointed by the IGWN Editorial Committee.
 - c. After incorporating appropriate comments, finalized presentation materials must be authorized by the IGWN Editorial Committee.
28. Invitations received by a member of any of the three Collaborations for a talk dealing with IGWN results at a workshop or conference are regarded as invitations to all Collaboration members, regardless of the role of the member (spokesperson, Working Group Chair, etc). Such invitations must be forwarded to the IGWN Speakers Committee, which will decide whether to accept the invitation, and if so, which Collaboration member(s) should deliver the talk. While preference will be given to the invitee, effort will be made to give opportunities to others.
29. The IGWN Speakers Committee will strive to select individuals for presentations to give appropriate credit to less visible, but critical efforts in the three Collaborations.
30. Regarding combined author lists: the authorship of Observational Results papers will be as described in the MoA main body (Section 7) and in Annex B. Each author affiliation will be designated appropriately in accord with target publication style requirements.
31. Detector and data characterization as well as some methodological papers may qualify for single-Collaboration or short author list publications as described in Section D.6 below.

D.6 Single-Collaboration or Short Author List Publications

This section addresses the classes of papers and presentations involving IGWN data that are eligible for short author list or single-Collaboration author lists: instrument papers, description and studies of gravitational-wave analysis methods, and detector and data quality/characterization studies. Short author list papers may be authored by a fraction of IGWN members and by non-IGWN members. Single-Collaboration papers may be authored by the whole Collaboration members or by a fraction of it, as defined by each Collaboration by-laws.

32. IGWN will strive to reward individuals and teams who have made significant contributions to observational publications, giving appropriate credit to less visible, but critical efforts in the three Collaborations. This will be achieved via the Publication Plan and the IGWN Editorial Committee. Short author list methods papers which enabled the relevant IGWN papers should be planned for advance, or simultaneous, release with the relevant IGWN papers, to highlight those critical contributions to new results, and key contributors to IGWN papers should have priority in giving timely talks relevant to their contributions.
33. All data that have been made available to the public, including detector strain data, may be used by members of the three Collaborations in short-author-list publications one week after they are public and provided that this does not conflict with and/or pre-empt the IGWN Publication Plan (section A.4).
34. Data released via low-latency Open Public Alerts are considered to be public data, and may be used similarly for short-author-list publications provided that this does not conflict with and/or pre-empt the IGWN Publication Plan.
35. To illustrate aspects of analysis techniques which address imperfections found in real data, and to support detector characterization and data quality studies, publications may be proposed which use some not-yet otherwise public data produced by the interferometers after it is assured that no signals of gravitational-wave interest are found in those data.
36. Waivers for the publications on normally proprietary data as described above will be approved by a unanimous consent of the Observational Science Division Chairs and Chairs of

the IGWN Editorial Committee. Waiver requests must be submitted to the relevant Working Group Chairs, who will forward the request to the Division Chairs and the Editorial Committee together with a brief statement of support or concern. The Division Chairs and Editorial Committee will respond to the request, and their decision, along with the rationale, will be communicated back to the requesting author(s) via the Working Group Chairs.

37. When a single-Collaboration paper is planned and approved according to the corresponding Collaboration rules, the IGWN Editorial Committee will verify that the scope of the paper is appropriate to have the proposed author list. Single-Collaboration papers will be included in a list of papers distinct from the IGWN Publication Plan. Each such paper will be circulated and reviewed per the publication rules of IGWN.
38. Irrespective of any waiver, any Observational Result derived from proprietary data will be considered a joint endeavor of the three Collaborations and disseminated as described in Section D.5.

D.7 Instrument and Technical Publications

39. Instrument papers, defined as publications addressing the technical description and performance of the instruments, as well as more general precision measurement and instrument science publications, and R&D papers on upgrades and future interferometers, include both single-Collaboration papers and short-author-list papers. Single-Collaboration papers are those produced under the auspices of one of the three Collaborations, including IGWN Observatory groups, while short author list papers are authored by a smaller subset of individuals (see Section D.6).
40. When single-Collaboration publications are proposed, they should be widely announced within the IGWN Instrument Science Division such that associated short-author-list publications can be planned in advance.
41. Short-author-list papers among these instrument publications must follow the policies defined in Section D.6, in addition to abiding by the following:

- a. Prior contributions in the domain, from any group of the three Collaborations must be recognized in text and via citations, as appropriate.
- b. Scientific or technical knowledge from experimental programs in IGWN that is the unique product of IGWN members must be recognized. This can be accomplished, e.g., by inviting IGWN members originating the knowledge to join the author list.
- c. Instrumental teams must report to the Instrumental Science Division and the IIB if they believe that there are (limited) domains of their work that remain outside of the IGWN scope. This situation could arise when there are potential commercial conflicts around the work. In these cases no unpublished collaboration results may be used in that private research. These proposed exclusive research areas are subject to the approval of the relevant Division and Working Group Chairs, with conflicts resolved by the IIB.
- d. All instrument papers authored by members of any of the three Collaborations need to be circulated to the full IGWN membership.

E Digital Infrastructure Transition

This Annex covers the operational transition from LVK to IGWN Digital Infrastructure (DI) during the MoA period. Governance of the Digital Infrastructure Division — including its mission, scope, Working Groups, and Committees — is defined in Annex C. Shared commercial costs, computing resource commitments, and personpower obligations are defined in Annex F.

E.1 Transition from LVK to IGWN Digital Infrastructure

1. During the MoA period, the digital infrastructure available to the Parties comprises the services inherited from the LVK era (“LVK services”) together with IGWN services as they enter production. LVK services are the operational baseline for the MoA period, supporting the completion and publication of O4 analyses, IR1 operations and IR1 analyses, and routine collaboration business. Identity and Access Management is provided by LVK services for all LVK members and activities until the IGWN Consortium transition (Section 14) is complete.
2. IGWN Digital Infrastructure will be developed and deployed progressively to replace LVK services, according to the phased roadmap set out in the IGWN Digital Infrastructure Plan (LIGO-M2600037, VIR-0174A-26, JGW-M2617216). A coexistence period between LVK and IGWN services is a planned condition of the transition and is expected to extend across the MoA period.
3. The migration to IGWN Digital Infrastructure follows two principal paths. Direct replacement applies where a new IGWN service will serve both the LVK and IGWN communities, for example an upgraded shared web or collaboration service. Independent deployment applies where a new IGWN service will serve only the IGWN community and the LVK service continues alongside it, principally Identity and Access Management. IGWN services may also be established where no LVK counterpart exists, and LVK services may be retired without an IGWN successor, as outlined in the IGWN DI Plan.
4. Direct replacement will proceed service by service, and will not be dictated by observing run or by Collaboration. For each such service, the LVK service will remain authoritative until

its IGWN replacement is in production and validated for the activities it supports, at which point the LVK service will be retired according to the roadmap.

5. Under independent deployment the two services will run concurrently, and users, information, and activities will migrate across as part of the transition to the IGWN Consortium (Section 14). The LVK service will remain authoritative for whatever has not yet been migrated, and will be retired only once the transition is complete or its remaining obligations have themselves ended.
6. No LVK service will be withdrawn while it remains required to support O4 or IR1 obligations.
7. The transition shall be planned and executed so as to avoid disruption to operations, so far as is reasonably practicable. Continuity of mission-critical low-latency services, including the Rapid Alert Project, and of access to the data and computing required for O4 and IR1 analyses, shall take precedence over roadmap milestones.
8. The DI Division Chair is responsible for coordinating the transition, including:
 - (a) migration of Identity and Access Management (IAM) for approximately 3000 members;
 - (b) continuity of the RAP throughout the transition; and
 - (c) progressive decommissioning of LVK services according to the roadmap set out in the IGWN Digital Infrastructure Plan.
9. LVK and IGWN services used in support of IGWN activities are operated under the common set of IGWN DI policies described in Section E.3, so that the Parties are not required to maintain duplicate policy, security, or support arrangements for equivalent services.
10. The technical architecture, requirements, phased roadmap, resource estimates, and risk register for IGWN digital infrastructure are set out in the IGWN Digital Infrastructure Plan and associated documents, which form the authoritative technical reference for this Annex.

E.2 Early Adoption and Existing Appointments

11. The Parties acknowledge that the IGWN DI Division was established operationally ahead of this MoA through the early transition of the LVK Computing Committee into the IGWN DI Division. From the effective date of this MoA, the arrangements described in the proposal governing that transition are superseded by this Annex and by Annex C. Appointments made under that proposal remain in effect until reviewed by the IIB.

E.3 Policies and Member Compliance

12. IGWN DI policies govern the use of digital infrastructure in support of IGWN activities. They are developed by the DI Division on behalf of the three Collaborations as a common text and brought to the IIB Chair by the DI Division Chair or CISO, from which point they follow the common decision-making process in Section 4.7. A policy takes effect upon approval by all three Collaborations.
13. The DI Division maintains a register of IGWN DI policies, recording for each policy its current text, its approval status in each Collaboration, and the date on which it took effect. The register is accessible to all members and is the means by which members identify which policies are in force.
14. The DI policies of each Collaboration in force on the effective date of this MoA continue to apply to that Collaboration's members, and are recorded in the register as such. They are not extended to members of the other Collaborations, and are superseded for all members only as common IGWN DI policies take effect under the preceding clauses.
15. Members of the Parties who participate in IGWN activities shall adhere to the IGWN DI policies recorded in the register, in their use of both LVK and IGWN services.

E.4 Chief Information Security Officer

16. The Parties acknowledge the unique role of the IGWN Chief Information Security Officer (CISO) in management of shared LVK resources across both LVK and IGWN services. This role includes the following:

- (a) the CISO will be a member of the JEC, an appointment that is in addition to any other DI representatives on that committee;
- (b) the CISO will take direction from the IIB on matters of information security;
- (c) in the case of an information security incident, the CISO will have the responsibility and the authorization to take whatever actions allow them to protect shared LVK or IGWN resources, including systems and data, to the best of their ability.

E.5 Risk Management and Reporting

- 17. The Parties acknowledge that IGWN DI inherits a resource deficit from LVK. The MoA period further requires the operation and support of LVK and IGWN services in parallel, an IAM migration of the full IGWN membership, and the continued operation of mission-critical rapid alert infrastructure. A description of these and related risks is maintained in the IGWN Digital Infrastructure Plan.
- 18. The DI Division Chair, supported by the Information Security Committee (ISC), is responsible for managing these risks and for keeping the IIB informed on a regular basis.
- 19. A material deterioration in DI capacity that threatens IR1 scientific delivery shall be reported by the DI Division Chair to the IIB for decision.

F Shared Commercial Costs, Computing Resources, and Personpower

This Annex establishes arrangements for shared commercial costs, computing resources, and personpower during the MoA period. Operational provisions governing the LVK-to-IGWN infrastructure transition are defined in Annex E. Governance of the Digital Infrastructure Division is defined in Annex C. A new cost-sharing model applicable to the full IGWN Consortium is being developed by the FRAC and will be presented to the Collaborations before groups are invited to join the IGWN Consortium.

F.1 Shared Commercial Costs

1. Shared commercial costs are those incurred for goods or services used across the full IGWN network, including software licences, cloud hosting of shared services, and similar jointly-used infrastructure. Current examples include the GitLab Ultimate licence and cloud hosting of the IGWN identity provider and event database.
2. The FRAC, in consultation with the relevant Division — principally the Digital Infrastructure Division — is responsible for identifying costs that fall under this Annex, determining their total value, and confirming that they constitute genuine network-wide shared costs. The FRAC shall maintain a register of such costs, review it annually, and notify the IIB of any new shared commercial commitments before they are entered into.
3. Shared commercial costs shall be split among the three Collaborations in proportion to each Collaboration's share of the IGWN automatic author list, using author counts from the August revision for the following financial year's allocation (Annex B, Section B.2.2).

F.2 Computing Resources

4. Each Collaboration shall make available to IGWN members a volume of computing and storage resources sufficient for its members to carry out their obligations under the IGWN Program.
5. The volume of resources in clause 4. shall be proportional to each Collaboration's share of the IGWN automatic author list, using the same author counts as defined in clause 3..

6. The FRAC, in consultation with the Digital Infrastructure Division, is responsible for assessing whether each Collaboration's compute contribution is consistent with its obligation under clause 5, using annual resource reports provided by the DI Division.
7. The FRAC shall report to the IIB where significant disparities arise between a Collaboration's expected and actual resource contribution.

F.3 Personpower for Shared Infrastructure

8. Each Collaboration recognises that the operation and development of shared IGWN infrastructure — principally within the Digital Infrastructure Division but also including other shared services identified by the FRAC — requires sustained staff effort in addition to monetary and computing contributions.
9. The FRAC, in consultation with the Digital Infrastructure Division and other relevant Division Chairs, shall identify the minimum aggregate staff effort required to operate and maintain shared IGWN infrastructure during the MoA period. This estimate shall be expressed in FTE, broken down by functional area, included in the IGWN Cost Model, and reviewed annually. The DI Division shall provide the underlying technical estimates to the FRAC, reporting through the DI Division Chair.
10. Each Collaboration shall contribute staff effort to shared infrastructure activities in proportion to its share of the IGWN automatic author list, using the same author counts as defined in clause 3. Contributions may be made through any combination of: (a) staff employed or funded by the Collaboration's member institutions and assigned to IGWN DI Division Working Groups; and (b) equivalent effort contributions agreed with the FRAC, for example through secondment arrangements or contracted support.
11. Individual member contributions to shared infrastructure activities are captured through the ISR framework (Annex B) and the IGWN Work Plan pledge process (Annex B, §B.1.2). The Collaboration-level commitment in clause 10 represents each Collaboration's collective obligation to ensure that shared services are adequately staffed, over and above individual good-standing requirements.

12. The FRAC shall monitor aggregate personpower contributions annually, drawing on ISR delivery records from GRASP and reports from the DI Division Chair, and shall report to the IIB where a Collaboration's contribution falls materially short of its expected share. The IIB shall engage with the relevant Collaboration leadership to seek a remediation plan.
13. The Collaborations acknowledge that shared digital infrastructure inherited from LVK enters the MoA period with a known staffing deficit, as noted in E.5. Each Collaboration commits to making reasonable efforts to address this deficit during the MoA period, with specific targets and timelines agreed by the FRAC and IIB.

F.4 Development of a New Cost Model

14. The arrangements in this Annex are explicitly transitional. The FRAC is developing a new cost-sharing model that will allocate shared costs at the level of national funding agencies, in line with the structure of the full IGWN Consortium. This model will be presented to the three Collaborations for approval before groups are invited to join the IGWN Consortium.

G IGWN Consortium Draft Documents

This appendix provides links to drafts of the IGWN Consortium Foundational Documents. These documents are provided for information and context only.

- IGWN Charter (draft): LIGO-M2200072, VIR-0331E-22, JGW-M2415932
- IGWN Bylaws (draft): LIGO-M2400263, VIR-0822D-24, JGW-M2416053
- IGWN Structure (draft): LIGO-M2500042-v4, VIR-0342C-25, JGW-M2516977
- IGWN Policies and Procedures (draft): LIGO-M2600090-v1, VIR-0308A-26, JGW-M2617309
- IGWN Formation Document (2025 initial version with subsequent updates, mainly to the timeline): LIGO-M2500031, VIR-0236C-25, JGW-M2516540