

# GENIE Collaboration Bylaws (v1.0)

GENIE Executive Board

---

## Abstract

GENIE is a suite of software products, known as the *Generator*, the *Comparisons* and the *Tuning*, for the experimental neutrino physics community. The goal of the project is to develop a canonical neutrino interaction physics simulation whose validity extends to all nuclear targets and neutrino flavours from MeV to PeV energy scales. The GENIE Collaboration is an international collaboration of experimentalists and theorists with current membership from Europe, North America and Asia. At the time of drafting this document, GENIE is already the most commonly used neutrino interaction physics simulation, and it plays an important role in the world neutrino program and in the design of future facilities.

This document aims to formalize the mission of the GENIE Collaboration and provide a formal framework for its governance. All GENIE collaborators, and our users, recognise the importance of GENIE throughout the lifecycle of every experiment (from conception and design till the final publication) and, thus, agree to collaborate in a constructive manner, beyond the language of this document, for the ultimate success of the GENIE project so that it can serve the needs of the world neutrino programme.

---

4	<b>Contents</b>	
5	<b>1 Amendments of the GENIE Collaboration Bylaws</b>	<b>4</b>
6	<b>2 Licensing and Intellectual Property Management</b>	<b>4</b>
7	<b>3 Mission Statement</b>	<b>4</b>
8	<b>4 Governance</b>	<b>5</b>
9	4.1 Co-Spokespersons . . . . .	5
10	4.2 Executive Board . . . . .	6
11	<b>5 Advisory Structure</b>	<b>7</b>
12	5.1 Advisory Board . . . . .	7
13	5.2 User Forum . . . . .	8
14	<b>6 Working Groups</b>	<b>8</b>
15	6.1 Technical Coordination . . . . .	9
16	6.2 Primary Processes . . . . .	9
17	6.3 Nuclear Physics . . . . .	9
18	6.4 Systematics & Tuning . . . . .	10
19	<b>7 The Incubator</b>	<b>10</b>
20	7.1 Scope . . . . .	10
21	7.2 Incubator Project Phases . . . . .	10
22	7.2.1 Phase 0 - Launch . . . . .	10
23	7.2.2 Phase 1 - Research & Development . . . . .	11
24	7.2.3 Phase 2 - Graduation . . . . .	11
25	7.2.4 Phase 3 - Integration and deployment . . . . .	12
26	<b>8 Membership</b>	<b>12</b>
27	8.1 Admission Procedure . . . . .	12
28	8.2 Voting Rights . . . . .	13
29	8.3 Authorship Rights . . . . .	13
30	8.4 Oversight . . . . .	13
31	8.5 End Of Term . . . . .	14
32	<b>9 Community Contributions</b>	<b>14</b>

33	<b>10 Code Management</b>	<b>14</b>
34	<b>11 Service Tasks</b>	<b>15</b>
35	<b>12 Publication Policy</b>	<b>15</b>
36	12.1 GENIE Work . . . . .	15
37	12.2 GENIE Internal Work and the Public . . . . .	15
38	12.3 Approving New Results for Publication and Presentation . . . . .	15
39	12.4 Paper committees . . . . .	16
40	<b>A List of Current Appointments</b>	<b>16</b>
41	<b>B Abbreviations</b>	<b>17</b>

## 42 1. Amendments of the GENIE Collaboration Bylaws

43 The first version of this document was prepared by an ad-hoc committee consisting of the three original  
44 authors of the GENIE code and founding members of the GENIE Collaboration (Costas Andreopoulos,  
45 Hugh Gallagher, Steve Dytman), hereby referred to as the Primary Authors, and a Fermilab represen-  
46 tative (Gabe Perdue), and it shall become official on November 12th, 2015. Any amendment to the  
47 Bylaws shall be discussed and voted in the newly-formed GENIE Executive Board.

## 48 2. Licensing and Intellectual Property Management

49 The GENIE Collaboration owns the GENIE trademark and rights to a suite of software products known  
50 as the *Generator*, the *Comparisons* and the *Tuning*.

51 The GENIE Generator source code was released under the GNU General Public Licence v3.0 (GPLv3)<sup>1</sup>.  
52 This license is irrevocable. The GENIE Collaboration is convinced of the benefits of making the Gen-  
53 erator source code available for scientific use. The GPLv3 license gives users a considerable freedom.  
54 The GENIE Collaboration expects that freedom to be used wisely, so that it can continue providing the  
55 source code. The GPL doesn't address issues specific to academic software and we include an additional  
56 set of guidelines (MCNET guidelines<sup>2</sup>) we expect to be followed.

57 The source code for the GENIE Comparisons and the GENIE Tuning products is not publicly released  
58 and the GENIE Collaboration reserves all rights. Parts of the code included in the Comparisons and  
59 Tuning can be made available to experimental collaborations under special agreements that protect  
60 exclusivity rights of the GENIE Collaboration.

61 GENIE reserves the right to produce new software suites under appropriate licenses in the future. The  
62 licenses for software packages not enumerated here will be stored in the code repository for the product  
63 and in the GENIE policy documents collection.

64 The original GENIE source code was largely developed by Costas Andreopoulos while employed at  
65 Rutherford Appleton Laboratory operated by the UK Science and Technology Facilities Council (STFC).  
66 According to the Patents Act 1977<sup>3</sup> and the Copyright, Designs and Patents Act 1988<sup>4</sup>, the intellectual  
67 property (IP) produced is owned by STFC. STFC is the primary GENIE stakeholder organisation the  
68 IP is managed by STFC Innovations Ltd. Contributions from US Collaborators were carried out under  
69 work supported by the US Department of Energy, which has a to-be-determined ownership stake in the  
70 IP rights of GENIE.

## 71 3. Mission Statement

- 72 1. The GENIE Collaboration shall provide a state-of-the-art neutrino MC generator for the world  
73 experimental neutrino community. GENIE shall simulate all processes for all neutrino species and  
74 nuclear targets, from MeV to PeV energy scales.
- 75 2. The GENIE Collaboration shall provide electron-nucleus, hadron-nucleus and nucleon decay gen-  
76 erators in the same physics framework as the neutrino-nucleus generator.

---

<sup>1</sup><https://www.gnu.org/licenses/gpl-3.0.txt>

<sup>2</sup><http://www.montecarlonet.org/GUIDELINES>

<sup>3</sup><http://www.legislation.gov.uk/ukpga/1977/37/contents>

<sup>4</sup><http://www.legislation.gov.uk/ukpga/1988/48/contents>

- 77 3. The GENIE Collaboration shall review critically all relevant theoretical work and experimental  
78 data and it shall synthesize selected physics models and data into a comprehensive and self-  
79 consistent picture of neutrino interaction physics.
- 80 4. The GENIE Collaboration shall curate archives of the world neutrino scattering data, and a large  
81 sample of complementary charged lepton and hadron scattering data, and it shall make those  
82 archives available in digital form for the purpose of neutrino interaction model validation, tuning  
83 and systematic error evaluation.
- 84 5. The GENIE Collaboration shall perform global fits to neutrino, charged-lepton and hadron scat-  
85 tering data and provide global neutrino interaction model tunes.
- 86 6. The GENIE Collaboration shall provide a complete systematic analysis of its default model.
- 87 7. The GENIE Collaboration shall provide expert advice to the world neutrino community on matters  
88 related to neutrino interaction phenomenology based on in-depth knowledge of relevant scatter-  
89 ing data and the experience building a comprehensive model of neutrino interaction physics. It  
90 shall also expert advice on all technical matters related to the realistic simulation of complex  
91 experimental environments.
- 92 8. The GENIE Collaboration shall provide tools to support the full life-cycle of simulation and  
93 generator-related analysis tasks, including a) a suite of neutrino flux and detector geometry navi-  
94 gation drivers which allow event generation for realistic, arbitrarily complex experimental setups  
95 using off-the-shelf components, b) standardised event generation applications for all major exper-  
96 iments, and c) event reweighting code allowing the propagation of generator-level uncertainties  
97 into physics analyses.

## 98 4. Governance

99 GENIE is a relatively small collaboration, and most of the key issues facing it, including content of  
100 upcoming releases, the release schedule, scheduling of meetings, and interactions with other software  
101 packages and community efforts, will be discussed by the entire collaboration. These discussions take  
102 place primarily through regularly scheduled phone meetings. However, specific management roles and/or  
103 decision-making authority reside in other bodies as described in this section. The overall structure of  
104 the GENIE Collaboration is outlined in Fig. 1.

### 105 4.1. Co-Spokespersons

#### 106 *Role*

107 Two Co-Spokespersons shall be the primary GENIE contacts and shall represent the international  
108 GENIE Collaboration.

109 The Co-Spokespersons shall provide leadership of the international GENIE Collaboration and shall bear  
110 the ultimate authority and responsibility for day-to-day operations.

111 At a regional level, Co-Spokesperson responsibilities requiring intimate knowledge of the local funding  
112 landscape and mechanisms, may be shared with or delegated to regional Principal Investigators (PIs).

113 The Co-Spokespersons shall work closely with the Executive Board and bring all important issues to  
114 the Executive Board for final discussion and vote.

115 The Co-Spokespersons shall be responsible for the agenda of the GENIE Collaboration meetings and  
116 GENIE workshops.

117 The Co-Spokespersons shall be responsible for developing the Advisory Board (Sec. 5) Terms of Refer-  
118 ence and for appointing its members.

119 The Co-Spokespersons shall handle requests by conference, workshop and school organizers for official  
120 GENIE talks, tutorials or contributions to generator comparison exercises.

121 Where normal decision-making processes lead to a deadlock, the longest-serving Spokesperson shall act  
122 as final arbiter to resolve issues that may arise.

#### 123 *Appointment*

124 One of the two Co-Spokespersons is C. Andreopoulos (*GENIE Benevolent Dictator For Life*).

125 The second Co-Spokesperson shall be elected directly by the voting members of the collaboration using  
126 a first past the post system.

#### 127 *Term*

128 The term of an elected Co-Spokesperson is 2 years.

#### 129 *Recall*

130 An elected Co-Spokesperson may be recalled by a ‘no confidence’ vote supported by a 2/3 majority of  
131 the voting members of the entire collaboration.

### 132 *4.2. Executive Board*

#### 133 *Role*

134 The governing body of the GENIE Collaboration is the Executive Board (EB), and it shall make all  
135 major decisions.

136 The members of the EB shall provide leadership and may represent the GENIE Collaboration to funding  
137 agencies and other official bodies.

138 The EB shall maintain and amend the GENIE Collaboration Bylaws.

139 The EB shall appoint a Chair who will be responsible for the organization and the agenda of EB  
140 meetings.

141 The EB shall appoint Technical, Working Group and Forum Coordinators.

142 Upon request, the EB shall appoint GENIE representatives to external bodies and collaborations.

143 The EB shall examine the proposals submitted by groups applying for membership, conduct the mem-  
144 bership negotiations and vote on the approval of new memberships.

145 Upon successful completion of membership negotiations and acceptance of new groups into the collab-  
146 oration, the EB shall have the oversight of these groups and shall be responsible for the preparation of  
147 annual reports comparing deliverables against all formally undertaken commitments.

148 The EB shall be responsible for developing a release roadmap, for authorizing new official production  
149 releases and for terminating official support of past production releases.

150 The EB shall make all executive decisions on the physics content of each production release, including  
151 the choice of released tunes and the selection of the default one.

152 The EB shall authorise the graduation of incubator projects (See. 7.2) and their integration into  
153 publicly available GENIE products.

154 In communication with the Technical and Working Group Coordinators, the EB shall maintain a list of  
155 available service tasks and it shall keep track of the service task credits accumulated by each GENIE  
156 member.

157 The EB shall be responsible for the selection of speakers for the official GENIE talks invited in recognized  
158 conferences, workshops and symposia.

159 The EB shall be responsible for the organisation of GENIE tutorials and for for the official GENIE  
160 contributions in the context of recognised HEP schools. The EB shall also be responsible for all GENIE  
161 contributions to generator comparison exercises in the context of recognised conferences and workshops.  
162 These responsibilities shall be delegated to dedicated groups to be formed at a later stage.

163 Meetings of the EB shall require a simple majority of the members of the Board in order to make  
164 decisions official.

165 EB decisions require a 2/3 majority (rounded up) of the EB vote (excluding absences). Admitting new  
166 collaboration members is the only exception to the above and requires unanimous agreement.

#### 167 *Appointment*

168 Initially, EB membership is restricted to the Primary Authors and a Fermilab representative.

169 Fermilab is granted membership on the EB because of the importance of GENIE to the laboratory's  
170 physics program and the very high degree of engagement between the laboratory and GENIE. Similarly,  
171 if other major HEP laboratories engage strongly with GENIE and adopt GENIE software as a core part  
172 of their software stacks, they will each be granted the right to appoint a representative to the EB.

173 Besides major HEP laboratory representatives, no additional appointments to the EB will be made if  
174 it exceeds a size of 10 members or 10% of the size of the GENIE Collaboration, whichever is lower.

175 If there are vacant EB positions then new at large members can be appointed. New members will be  
176 considered if the total collaboration population grows to be larger than ten times the number of EB  
177 members. These members are nominated by the collaboration, following a nomination solicitation by  
178 the Spokesperson, and appointed following a first past the post vote by existing EB members.

#### 179 *Term*

180 No limit is imposed on the term of Primary Authors in the EB.

181 The term of representatives of major stakeholder organizations, such as national Laboratories, is 5 years  
182 and it is renewable.

183 The term of all other appointed members is 2 years and it is renewable.

184 The term of the EB Chair is 1 year and it is renewable.

## 185 **5. Advisory Structure**

### 186 *5.1. Advisory Board*

187 The GENIE Collaboration shall establish a permanent Advisory Board (AB), within a year of estab-  
188 lishing its governance structure and publishing its bylaws.

189 The AB shall consist of leaders in the fields of HEP software, neutrino interaction phenomenology and  
190 neutrino experiment, and it shall aim to have all relevant communities represented.

191 The AB shall advise the Co-spokespersons on an biennial basis.

192 The AB shall make recommendations on the GENIE Collaboration structure, its effectiveness and its  
193 resource allocation. It shall also gather comments from the GENIE user community, review recent  
194 progress in GENIE, and make recommendations for future improvements.

195 The Co-spokespersons shall report the AB recommendations to the Executive Board, which shall con-  
196 sider these recommendation and develop an action plan. The action plan shall aim to address, to the  
197 degree that is possible given practical limitations, all actual or perceived shortcomings within the 2 year  
198 period till the next due AB report.

199 Futher specifics shall appear in the AB Terms of Reference document which shall be made publicly  
200 available on the GENIE web site in due time.

## 201 *5.2. User Forum*

202 The GENIE Collaboration shall also seek direct and frequent input from the community at grass roots  
203 level.

204 Besides setting-up user mailing lists and issue tracking systems, the GENIE Collaboration shall seek to  
205 strengthen its interactions with the neutrino community by organising a regular GENIE Users Forum.

206 The User Forum shall be managed by a Forum Coordinator appointed by the Executive Board with a  
207 renewable term of 2 years.

208 The Forum Coordinator shall be responsible for the organization and the agenda of the User Forum.

209 The Forum Coordinator shall report to the Executive Board and the Technical and Working Group  
210 Coordinators and facilitate the launch of incubator projects (see Sec.7) to bring the improvements  
211 demanded by the community.

212 On first instance, the GENIE Users Forum will be held in conjunction with the Fermilab Simulations  
213 for Neutrinos meeting.

## 214 **6. Working Groups**

215 All official GENIE work shall be carried out strictly within the GENIE Working Groups (WGs), under  
216 the leadership of the corresponding Coordinator and under the supervision of the EB.

217 To manage the interplay between the host of diverse development tasks that are needed to achieve  
218 the GENIE development objectives, and to ensure that all GENIE work is well-managed, not overly  
219 fragmented and in good alignment with the GENIE development strategy, as set by EB, four WGs with  
220 a broad mandate shall be setup:

- 221 • a *Technical Coordination Group (TCG)*,
- 222 • a *Primary Processes Working Group (PPWG)*,
- 223 • a *Nuclear Physics Working Group (NPWG)*, and
- 224 • a *Systematics & Tuning Working Group (STWG)*.

225 The TCG is led by the Technical Coordinator (TC) and the three physics WGs are lead by the corre-  
226 sponding Working Group Coordinator (WGC).



227 The Coordinator of each group is appointed by the EB with a term of 5 years that is renewable.  
228 Wherever appropriate, specialized and well-defined sub-tasks shall be delegated further to ad-hoc Task  
229 Forces (TF) led by a Task Force Manager (TFM).  
230 The mandate of each of the WG, as well as the appointed leaders and their term, is detailed below.

### 231 *6.1. Technical Coordination*

#### 232 *Mandate*

233 The Technical Coordination Group (TCG) shall have the oversight and ultimate responsibility for all  
234 technical aspects of GENIE development and deployment.

235 The TCG shall work in close collaboration with all Working Groups to assure that the GENIE Collab-  
236 oration delivers robust, fully validated and well-documented software.

237 The TCG shall be responsible for

- 238 • all aspects of testing and quality assurance,
- 239 • the build and configuration system,
- 240 • the core GENIE framework,
- 241 • the numerical algorithms,
- 242 • the experimental interfaces, including the flux and geometry navigation drivers and the event  
243 generation applications.

244 The TCG shall conduct regular GENIE code maintenance, including, but not limited to reviews, refac-  
245 torizations, and technical updates.

### 246 *6.2. Primary Processes*

#### 247 *Mandate*

248 The PPWG shall review critically the primary neutrino interaction modeling in GENIE and it shall  
249 evaluate the strengths and deficiencies of this model in view of modern theoretical work and experimental  
250 measurements.

251 The PPWG shall recommend modeling improvements and, in coordination with the TCG, it shall  
252 implement and fully deploy the improved models conforming to the GENIE framework requirements.

253 In coordination with the STWG, the PPWG shall a) validate the primary neutrino interaction model,  
254 b) study its systematics, c) develop and deploy the necessary event reweighting tools, and d) provide  
255 an initial tune.

256 All new experimental data required for the above-mentioned work shall be curated, and all work shall  
257 be thoroughly documented in the source code, in internal technical notes and in the GENIE User and  
258 Physics manual.

### 259 *6.3. Nuclear Physics*

#### 260 *Mandate*

261 As for the PPWG, but focussing specifically on the modeling of initial and final state nuclear effects.

262 *6.4. Systematics & Tuning*

263 *Mandate*

264 The STWG shall recommend, implement and validate the global GENIE tuning strategies. In coordi-  
265 nation with the PPWG and NPWG, it shall curate the GENIE data archives and have the ultimate  
266 responsibility for developing and maintaining all event reweighting, fitting and data/MC comparison  
267 tools.

268 The STWG shall produce the official global GENIE tunes and ensure that these tunes are thoroughly  
269 documented and correctly deployed in GENIE production versions. It shall quantify all generator-level  
270 uncertainties and ensure the availability of tools to propagate those uncertainties into physics analyses.

271 **7. The Incubator**

272 *7.1. Scope*

273 The *incubator* is where all actual work above a complexity threshold takes place. It consists of a series  
274 of *incubator projects*.

275 Incubator projects are in-house development activities or community development efforts led by the  
276 GENIE WG Coordinators and overseen by the GENIE Executive Board.

277 An incubator project is the *unique route* for any physics or software development into any of the GENIE  
278 suite products (Generator, Comparisons, Tuning).

279 Incubator projects may include, but not limited to,

- 280 ● the development of a new physics model,
- 281 ● the improvement of an existing model,
- 282 ● a systematic study,
- 283 ● the tuning of a physics component,
- 284 ● the development of a new tool or the addition of a new feature to an existing tool,
- 285 ● an upgrade of the framework,
- 286 ● an improvement of numerical procedure, or
- 287 ● a documentation improvement.

288 *7.2. Incubator Project Phases*

289 *7.2.1. Phase 0 - Launch*

290 The starting point is the identification of a GENIE need by a collaboration member or a community  
291 member at large. Following a consultation between all relevant WGCs and the TCs, one or more  
292 *incubator projects* may be launched to address the identified GENIE need.

293 Each incubator project shall have a fully defined and documented scope and milestones.

294 Each incubator project shall have fully defined and documented requirements, including software engin-  
295 eering, validation and documentation ones, as appropriate.

296 A private development branch and an internal wiki shall be created for each project.

297 A clear reporting line shall be established for each incubator project. The WG or Technical Coordinator  
298 in the reporting line (or a delegate) is designated as *Incubation Manager* (IM) and leads the project to  
299 graduation.

300 The roles of a developer and IM are not incompatible and, on some instances, especially for smaller,  
301 in-house development projects, the IM may also be an active or the lead developer.

302 An incubator project may be launched even if the corresponding team of developers is not yet identified.  
303 Such projects, which may be important for the GENIE objectives but which the GENIE collaboration  
304 does not have the resources to tackle on a short timescale, shall be advertised in the User Forum to  
305 solicit community contributions.

### 306 *7.2.2. Phase 1 - Research & Development*

307 Regular updates in GENIE WG meetings, as well as an regularly updated wiki that allows one to trace  
308 the evolution of the project, are required.

309 Additional requirements may be added, as a result of the experience gained during this phase.

310 At the end of the development cycle, the developers of an incubator project may request the graduation  
311 of that project and its inclusion within the corresponding GENIE product.

### 312 *7.2.3. Phase 2 - Graduation*

313 Upon receiving a request for project graduation the IM shall verify that the project meets its agreed  
314 goals and, on this condition, launch a formal review.

315 Reviews shall take place during phone, video or face-to-face meetings.

316 The developers of the reviewed incubator project shall make all material to be reviewed available to the  
317 GENIE Collaboration at least a week prior to the review.

318 The reviewed material may include, as appropriate given the nature of each project:

- 319 1. Clean and well-documented code.
- 320 2. Validation programs, with sufficient documentation that they can be reproduced by the WG  
321 convener.
- 322 3. Archive of theorist communication (including code) and presentations on the topic.
- 323 4. A short (<10 page) document that (a) summarizes validation results, (b) presents a table sum-  
324 marizing code changes, (c) highlights important assumptions in the code and possibly, (d) makes  
325 suggestions for merging or tuning the model in the future, and (e) makes suggestions for systematic  
326 error assignment for the model.

327 Note that the above list is not exhaustive or definitive, but is meant to serve as a guide.

328 Any member of the GENIE Collaboration may sit in the review without invitation. At least one GENIE  
329 Collaboration member other than the developers and the IM is required to be present (or two members  
330 if the IM is also an active developer of that project).

331 The reviewers shall take into account the agreed scope and requirements. No incubator project shall be  
332 allowed to graduate unless it fully meets the agreed requirements.

333 The review shall give special emphasis, as appropriate, on

- 334 • Correctness and performance against previously agreed validation criteria.

- 335 • Robustness and use of sound software engineering practices.
- 336 • Sufficient documentation in various forms.

337 The developers and IM shall address all concerns raised during the review. If major concerns are raised,  
338 a follow up review shall be organised by the IM.

339 Upon the successful completion of the review, the IM requests from the EB to formally allow the project  
340 to graduate.

#### 341 7.2.4. Phase 3 - Integration and deployment

342 Upon EB approval, and where appropriate, the IM merges the code into the trunk version of the  
343 corresponding GENIE product and repeats the validation procedure.

344 Work shall commence, if necessary, to bridge the gap between the requirements agreed with the project  
345 developers and the requirements for including the end result of a project within an official GENIE  
346 product release. This may include work on the efficiency or software engineering aspects of the code to  
347 satisfy requirements which may have not been included in the original project scope, upon consideration  
348 of the profile, constraints and abilities of the developers.

349 Normally, the necessary improvement work shall be undertaken by the IM. If the necessary work is judged  
350 to be of considerable complexity that warrants a more formal development procedure and collaboration  
351 scrutiny, *new incubator projects shall commence at this point with a new development team and IM.*

352 Upon completion of the above process and at the request of the EB, the improved work will be merged  
353 into a release candidate branch by the IM.

## 354 8. Membership

### 355 8.1. Admission Procedure

356 GENIE has a broad mission but also a sharp focus on delivering state-of-the-art and fully validated  
357 simulation software to the world experimental community. Membership of the GENIE collaboration  
358 implies a strong commitment to the GENIE vision and procedures and a long-term contribution to the  
359 core GENIE mission.

360 A group of scientists, from any number of institutions, led by a single Principal Investigator (PI) may  
361 apply for GENIE membership as follows:

- 362 • A proposal should be submitted to the GENIE Spokesperson. The proposal, which may not exceed  
363 5 pages, should
  - 364 – introduce the group members and outline their relevant expertise and past accomplishments,
  - 365 – provide statements on the proposed physics contribution to GENIE,
  - 366 – provide statements on the proposed nature and level of GENIE service task activities,
  - 367 – provide estimates of effort spent on GENIE and all other commitments (research, teaching,  
368 administration), for all prospective members, and explain the sources of funding.
- 369 • The Spokesperson shall inform the EB, which shall consider the proposal within a period of 4  
370 weeks. Clarifications and/or modification of the proposal may be requested from the EB, to bring  
371 it in better alignment with actual GENIE needs, vision and the overall development strategy.

- 372 • Once a finalised proposal is submitted, the EB shall consider the application again, within a period  
373 of 2 weeks, and make a final decision. *The EB will work with the incoming group to establish a*  
374 *mutually satisfactory term for accomplishing the proposed tasks. Terms can be established to ease*  
375 *the transition to long term collaboration.*
- 376 • Upon successful completion of the admission process, the new members are granted immediate  
377 membership rights.

378 New individuals at the post-doctoral scholar level and below joining already admitted groups and insti-  
379 tutions may join GENIE pending a simple majority vote of the EB with no formal application required.  
380 New individuals at the junior faculty level and higher are expected to formally apply for membership.

### 381 8.2. Voting Rights

382 GENIE Collaborators are considered voting members of the collaboration if they hold a scientific ap-  
383 pointment beyond the postdoctoral level at a participating institution.

### 384 8.3. Authorship Rights

385 GENIE Collaborators are considered authors on GENIE papers once they have been members of the  
386 collaboration for at least six months. GENIE Contributors and Collaborators who have been members  
387 for less than six months may still be invited to be authors on GENIE papers in cases where the Col-  
388 laboration believes the individual made important contributions to the paper. In case of disputes, the  
389 Executive Board will arbitrate and settle the situation as needed.

### 390 8.4. Oversight

391 A review of the activities of collaborating institutes shall be undertaken annually by an ad-hoc group  
392 appointed by the EB.

393 Concerns regarding discrepancies between commitments and deliverables, or adherence to the GENIE  
394 operating principles and procedures, shall be communicated to the PI of the group whose contribution  
395 is reviewed.

396 It is expected that immediate corrective action shall be taken to address all concerns.

397 Major unresolved concerns trigger sanctions in the form of membership re-negotiation or, in the dis-  
398 cretion of the EB, termination of GENIE membership, and of all authorship rights, with immediate  
399 effect.

400 What constitutes a major concern is unavoidably subjective and it is at the discretion of the EB to define  
401 it. However, the authors of this document wish to ensure that, sanctions are automatically enacted by  
402 the EB in response to:

- 403 • Publication of GENIE work (see Sec. 12.1 for a definition) without the prior agreement of the  
404 GENIE Collaboration.
- 405 • Distribution of GENIE code outside of the official distribution channels.
- 406 • *Actions that have large and negative impact on the basic mission of the GENIE collaboration.*

407 *8.5. End Of Term*

408 The term of membership of the GENIE Collaboration is specified in the proposal on the basis of which  
409 members were admitted.

410 GENIE membership renewal proceedings may start 4 months in advance of the end of term.

411 GENIE membership shall not be normally extended unless there is a firm established basis for continuing  
412 collaboration.

413 The membership renewal procedure is identical to the procedure for admitting new members.

414 At the end of the membership term, all GENIE-specific roles and access to GENIE computing resources  
415 are automatically revoked.

416 GENIE Collaboration members whose membership has come to an end become *Legacy Members*. Legacy  
417 Members retain authorship rights for 6 months for every 2-year period of membership, up to a maximum  
418 of 1.5 years.

419 **9. Community Contributions**

420 Naturally, a popular open-source project like GENIE, has a large number of contributors. It is not  
421 practical or desirable to grant GENIE Collaboration membership to all contributors, as membership  
422 requires a long-term commitment and work that includes a significant service task component.

423 Casual contributions could represent a considerable component of the overall GENIE development effort.  
424 This effort needs to be harnessed and aligned with the overall GENIE development objectives, and  
425 contributors need to be educated on the GENIE development procedures and standards.

426 The GENIE WG Coordinators may freely invite contributors in GENIE meetings and WG activities.

427 Access to non-publicly available elements of the GENIE project code repository may be granted to  
428 contributors.

429 The GENIE Collaboration owns the rights to all GENIE works (see Sec.12.1 for definition).

430 Contributors shall observe the same Publication Policy (see Sec.12) as full collaborators.

431 Under no circumstance shall a contributor distribute GENIE code and documentation outside the official  
432 GENIE distribution channels.

433 Contributors are not automatically included in the author list of GENIE publications. However, the  
434 GENIE Collaboration shall acknowledge these contributions as appropriate including, but not restricted  
435 to, inviting contributors in the author list of relevant GENIE publications.

436 **10. Code Management**

437 For a collaboration like GENIE that is closely associated with a software product, it is reasonable  
438 to enumerate some basic principles of code management here. In general, the particulars of code  
439 management will be detailed in position papers found in the official repository.

440 It should be generally understood that write permissions into the GENIE repository is by invitation only.  
441 Not all collaborators will have write permissions in every part of the repository and it is even feasible  
442 some collaborators will not need write permissions at all, although the expectation is collaborators will  
443 be able to write into every part of the repository necessary for conducting their work.

## 444 11. Service Tasks

445 The GENIE collaboration is responsible for a software product that is widely used by the high energy  
446 physics community. As such it must maintain high standards for software engineering quality, documen-  
447 tation, and user support. These tasks require a significant investment in time and member institutions  
448 will be asked to contribute to these and other tasks that support GENIE’s mission.

449 The GENIE Executive Board shall establish a committee chaired by the Spokesperson or a designee  
450 and containing not less than three members that is responsible for reviewing each institution’s plans for  
451 and implementation of their service support work. This “Service Works” committee shall consider the  
452 size and technical capabilities of each institution and seek to produce a service plan that group has the  
453 ability and resources to execute that is fair to all the other institutions in the collaboration.

454 The Service Works committee shall twice annually produce a written summary of the various service  
455 agreements between GENIE and all member institutions that shall be available to members of the  
456 collaboration for review.

## 457 12. Publication Policy

### 458 12.1. GENIE Work

459 GENIE work is defined as any investigation that leads to accepted commits into the official code reposi-  
460 tory and/or any work conducted under the auspices of one of the GENIE WGs.

### 461 12.2. GENIE Internal Work and the Public

462 It is generally understood that work conducted in a GENIE WG is internal information and not to  
463 be shared broadly until it is fully approved by the collaboration. In some cases developers will be  
464 permitted to show work-in-progress to colleagues outside of GENIE. Most GENIE Collaborators will  
465 likely be members of experiments and they may wish to show progress or use results of their work in  
466 GENIE, especially to justify continued cooperation with GENIE. Approval for this sort of information  
467 sharing requires verbal approval from the working group coordinator overseeing the work. In these cases,  
468 the Collaborator should carefully mark all plots and slides with strong language to identify the code  
469 as a “development version.” In general, work in progress results of this nature may not be shown at  
470 international conferences or used in publications.

### 471 12.3. Approving New Results for Publication and Presentation

472 New results for publication and presentation need to pass a formal review and to be approved by the  
473 GENIE Collaboration.

474 It is expected that the supporting materials will already carry the approval of the WG under which the  
475 work was conducted and WG Coordinators have veto rights over any material proposed for publication  
476 which did not pass through their group for approval first. Generally speaking, the most appropriate of  
477 the PPWG or NPWG Coordinator is expected to have approved new results obtained using new GENIE  
478 models, and the STWG Coordinator is expected to have approved any new result that impacts on the  
479 comprehensive GENIE model and the GENIE tune.

480 New results may not be included in publications and presentations unless they are obtained using either:

- 481 • official production versions of GENIE products, or

482 • code that, although not yet in an official production version, comes from a graduated project<sup>5</sup>.

483 Exceptionally a WG Coordinator may allow new results obtained from a project that is not yet graduated  
484 to be considered for *presentation only*. This shall be allowed only if the project has met all the agreed  
485 physics requirement, and where it is clear that any outstanding work towards project graduation does  
486 not impact the physics. However, such results may not be included in peer-reviewed publications or  
487 e-prints.

488 Reviews of new results shall take place during phone, video or face-to-face meetings.

489 The group seeking approval for new physics results shall make all material to be reviewed available to  
490 the GENIE Collaboration at least a week prior to the review.

491 The review shall be chaired by the relevant WG Coordinator or a designee. Where more than one WG  
492 Coordinators are involved, the responsibility for chairing the review shall be shared. For new results  
493 from developments that do not fit in any of the above categories, the EB shall appoint an ad-hoc review  
494 chair.

495 Any member of the GENIE Collaboration may sit in the review without invitation.

496 The group seeking approval for new physics results shall address all comments, upon which the review  
497 chair shall declare the start of a final two-day period whereby the whole GENIE collaboration may  
498 comment further on the (potentially revised) new results.

499 If no new comment is received within the two-day period, that is not addressed to the satisfaction of  
500 the review chair, the new result is declared to be an official GENIE result.

#### 501 12.4. Paper committees

502 The Executive Board shall create a paper committee for each GENIE publication, consisting of not fewer  
503 than three collaboration members. Each committee shall have a chair chosen by the EB or, if the EB  
504 declines to appoint a chair, appointed by the committee members directly. It shall be the responsibility  
505 of the paper committee to review the publication with the level of scrutiny expected for a peer-reviewed  
506 journal. Papers that meet the satisfaction of the committee shall be presented to the collaboration as a  
507 whole for approval. Authors must make every reasonable attempt to fully satisfy the requirements of the  
508 collaboration. In cases of disputes over paper content, the first arbitrating body is the paper committee.  
509 If the paper committee cannot forge a consensus on the content of the paper, the final authority shall  
510 rest with the EB.

### 511 A. List of Current Appointments

#### 512 Governance:

- 513 • Co-Spokespersons: Costas Andreopoulos (Liverpool/STFC-RAL), Steve Dytman (Pittsburgh)
- 514 • Executive Board: Costas Andreopoulos (Liverpool/STFC-RAL), Steve Dytman (Pittsburgh),  
515 Hugh Gallagher (Tufts), Gabe Perdue (Fermilab) (chair)

#### 516 Working Group leadership:

---

<sup>5</sup>The mechanics of scientific project management within GENIE are discussed in detail in Sec. 7.



- 517 • Technical Coordinator: Robert Hatcher (Fermilab)
- 518 • Primary Processes Working Group Coordinator: Hugh Gallagher (Tufts)
- 519 • Nuclear Physics Working Group Coordinator: Steve Dytman (Pittsburgh)
- 520 • Systematics & Tuning Working Group Coordinator: Costas Andreopoulos (Liverpool/STFC-RAL)

521 **Advisory structure and community relations:**

- 522 • Forum Coordinator: Gabe Perdue (Fermilab)
- 523 • Advisory Board: *TBD*
- 524 • GENIE representative to the NuSTEC Board: Gabe Perdue (Fermilab)

525 **B. Abbreviations**

- 526 • AB: Advisory Board
- 527 • EB: Executive Board
- 528 • IM: Incubation Manager
- 529 • NPWG: Nuclear Physics Working Group
- 530 • PPWG: Primary Processes Working Group
- 531 • STWG: Systematics & Tuning Working Group
- 532 • TC: Technical Coordinator
- 533 • WG: Working Group
- 534 • WGC: Working Group Coordinator

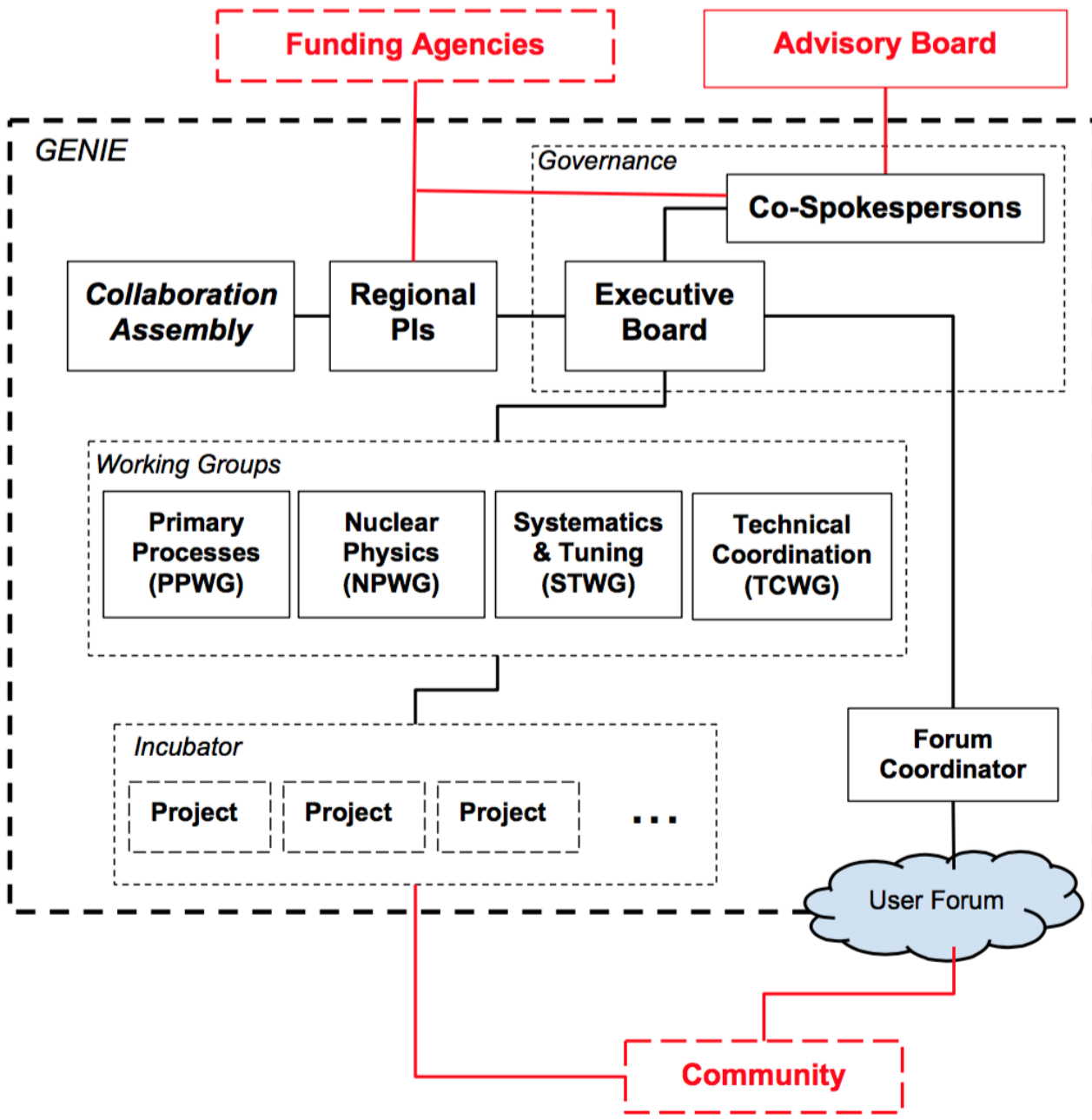


Figure 1: GENIE Collaboration organogram.