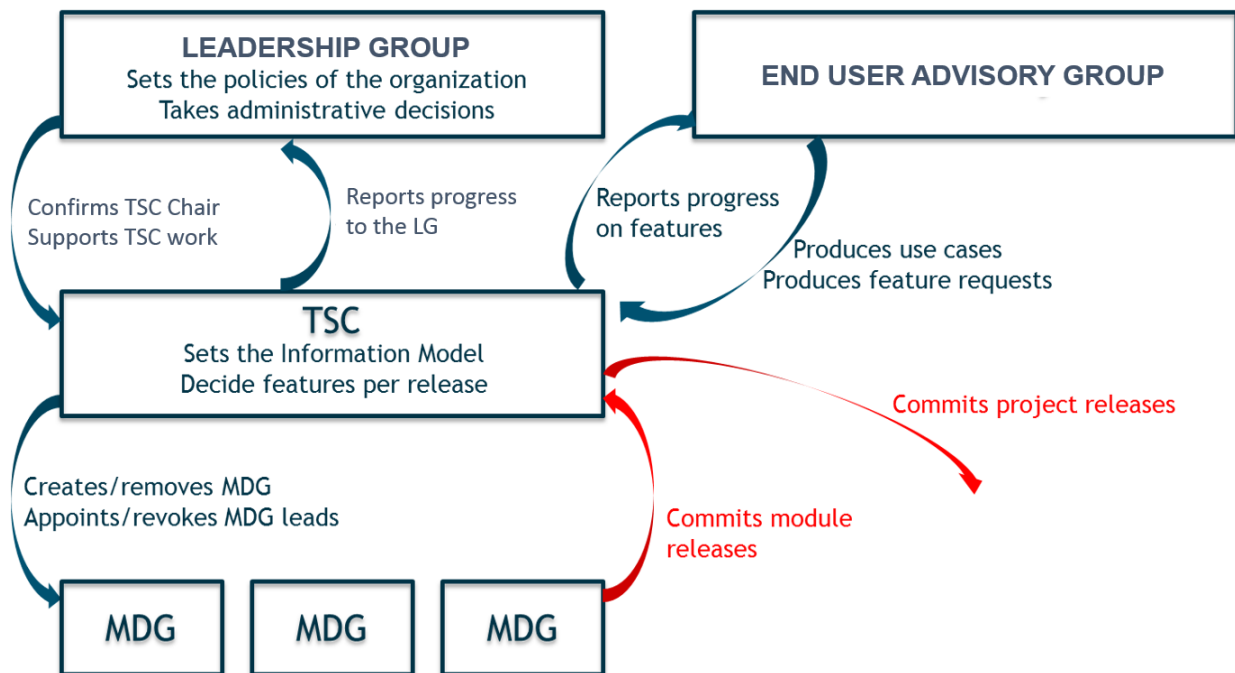**Open Source MANO Working Procedures**
V1.0

1. INTRODUCTION

The governance of the OSG OSM (Open Source MANO) is structured into 4 main bodies:

- Leadership Group (LG)
- Technical Steering Committee (TSC)
- Module Development Groups (MDG)
- End User Advisory Group (EUAG)

The following figure illustrates the governance model.

Organizations participating in these bodies and those involved in code contributions shall sign the OSG OSM agreements to guarantee their adherence to the FOSS (Free and Open Source Software) license being used in the project.

Organizations are represented by individuals. Individuals may contribute to the OSG, as a member of one of the previous bodies, participating actively in the administrative or technical coordination of the project, but also can contribute in a different role. These are the roles that individuals can play:

- Member of a body
    - Leadership Group member
    - Chair of the Leadership Group
    - End User Advisory Group member
    - EUAG chair
    - TSC member
    - TSC chair
    - MDG Lead
    - Committers (relevant code contributors)
- Contributors (contributors of code, documenting, testing, bug reporting…)
- Users

Next figure illustrates the different roles.
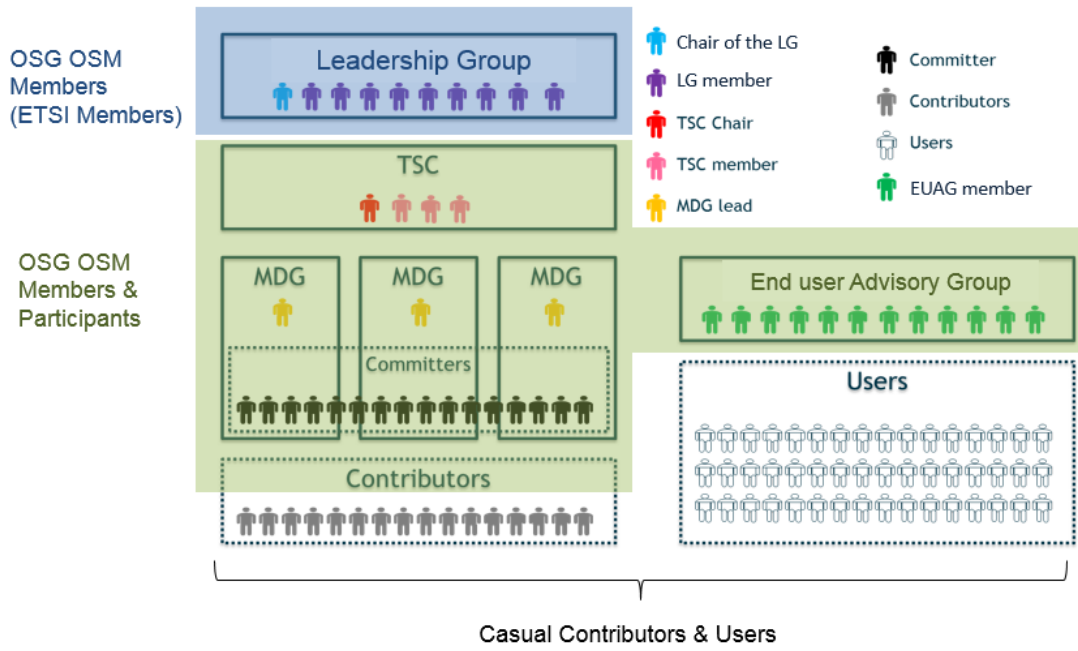
The bodies and roles, as well as the decision making processes, are described in detail in next sections.

2. GOVERNANCE BODIES

2.1. Leadership Group

Role of the body

Its role is to set the policies of the organization and to take administrative decisions and guarantee vendor-neutrality. Its functions include:

- Maintaining the OSM Working Procedures
- Managing and protecting the project's trademarks and brand
- Ensuring the connection between the use cases coming from the End User Advisory Group and the releases approved by the TSC.
- Managing finances and approving expenditures (if applicable)
- Act as external representatives of OSG OSM
- Managing the liaison with external organizations (SDOs, related open source projects, etc.)
- Ratifying the elected TSC chair
- Coordinating marketing efforts

Requirements for membership

Members are organizations represented by individuals. The membership to this LG is limited to ETSI members and shall guarantee vendor-neutrality.

Organizations belonging to the LG, besides having membership status, are required to have a high engagement in the project, contributing actively as developers, early adopters or testers (e.g. for interoperability testing). This engagement will be effective through the commitment of 2 FTE (Full-Time Equivalent) contributed to the project[1], one of them acting as the main technical contact. Their names shall be appropriately communicated to the LG and will be made public in the OSM Portal.

Each organization meeting these requirements may propose candidates (1 person per organization) to cover open seats in the LG. This individual might be different than the 2 FTE declared by the organization. Their name will also be made public in the project web page.

The process for electing new organizations to become LG members would be tied to the commitment to become active contributors in one of these categories (for details, see the "Decision making" section): developers, early adopters or testers (e.g. for IOP testing). In addition, every LG member shall play a role in the LG and shall be in charge of a specific activity inside the LG (e.g. chairing the LG, liaison with SDOs, collection of use cases, coordinating marketing actions, coordinating demos, etc.).

Leadership of the body

The Chair of the LG, as the rest of the LG members, will be elected. The responsibilities of the Chair of the LG include:

- Setting periodic calls for the LG
- Representing the project externally

2.2. Technical Steering Committee

Role of the body

Its role is to coordinate the project's technical activities. Its functions include:

- Setting and evolving the Information/Data Model to meet End-User Advisory Group priorities.
- Collecting feature requests from the End-User Advisory Group and prioritizing them per release.
- Ensuring the implementation of the feature roadmap and the Information Model.

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[1] The LG member might become one of the 2 FTE of their company as long as they are engaged full time to OSG OSM activities.

- Deciding what is distributed as outcome of the project. In particular, all releases shall be approved by the TSC (becoming also accountable of the outcome).
- Setting basic implementation guidelines.
- Creating/removing Module Development Groups.
- Appointing/revoking Module Development Groups Leads.
- Fostering, supporting and growing the project's community.

See the "decision making" section for details about voting procedures related to these functions.

Requirements for membership

TSC members are individuals appointed by those organizations that contribute most to the project. Each organization may appoint the individual (1 person per organization) that they want to represent them in the TSC. It is desired that the individual is a significant code contributor in the project or a respected individual in the NFV ecosystem.
The initial TSC will be nominated according to the procedure described in OSG OSM Terms of Reference (clause 14, "Internal organization").

The process for electing new organizations to become TSC members is detailed in the "Decision making" section. It follows these general guidelines:
- There will be a maximum of N members (N=5 is the current agreement)
- New TSC memberships will require being in the top number of merged (approved) code lines at organization level (historical contributions in the last 3 releases).

TSC membership will be updated after each release.

Leadership of the body

The TSC chair is elected by the TSC from the list of TSC members and endorsed by the LG (see "Decision making" for details). The responsibilities of the TSC chair are:
- Setting periodic calls to drive technical activities inside the project and coordinate between modules
- Reporting (at least) monthly to the LG on the progress of technical activities
- Arbitrate feature ownership among development groups

2.3. Module Development Groups

Role of the body

A Module Development Group (MDG) is in charge of developing and maintaining a specific software module/library in the project. It is a pure technical group, consisting of code contributors (committers) and, among them, a technical leader (MDG Lead) elected by the TSC.

Requirements for membership

MDGs are created by the TSC to accommodate the number of active modules to the project needs. Whenever an MDG is created, there shall be at least 3 committers identified from the organizations participating in OSM. If these requirements are not met, then the MDG cannot be created.

The initial set of MDGs will map 1-to-1 to the modules of the initial project architecture.

The committer role, due to its peculiarity, is explained in detail in the Roles section, so that it is clearly distinguished from other contributors' roles.

Leadership of the body

Whenever a new MDG is created, the TSC will elect an MDG Lead from the initial set of committers. Each MDG Lead will be the owner of that module and the interfaces where this module is "producer", and has the right to accept or reject code contributions based on technical reasons (alignment to the agreed impact, stability after tests, etc.).

MDG Lead responsibilities include:
- Setting and evolving the internal SW architecture of that module
- Setting basic implementation guidelines for that module

- Accept/reject contributions to that module
- Setting periodic calls/IRC to drive technical activities inside the MDG

2.4. End User Advisory Group

Role of the body

The End User Advisory Group (EUAG) produces end user recommendations, in the form of feature requests and use cases, to the TSC.

Requirements for membership

Its members are required to be operators/service providers. Other types of end users of the technology might be admitted, if the LG can identify them in the future. To date, there is only agreement that any service provider or operator willing to be part of this Advisory Group will be accepted.

Operators/service providers belonging to the LG will also be part automatically of the End User Advisory Group.

Leadership of the body

A Chair of the EUAG will be elected by the EUAG members. The responsibilities of the Chair of the EUAG are:
- Setting periodic calls for the EUAG
- Guaranteeing that information of use cases and new feature requests is promptly generated and aggregated for the TSC and the LG.
- Serving as contact person with the TSC and the LG.

3. ROLES

An individual may be member of a governance body and participate actively in the coordination of the project, playing one of the following roles:

- LG member
- Chair of the LG
- TSC member
- TSC chair
- MDG Lead
- EUAG member
- EUAG chair

These roles have been described in detail in previous sections. Apart from them, an individual may still participate in the project playing a different role. This section describes the rest of roles.

3.1. Users

Some of the most important participants in the project are people and organizations who use the software. Users can contribute to the OSG OSM by providing feedback to developers in the form of bug reports, feature suggestions and use cases. As well, users can participate in the community by helping other users on mailing lists and user support forums. Users do not need to be affiliated to an organization to use the software or provide bug reports.

3.2. Contributors

Contributors are all the volunteers who are contributing code, documentation, or resources to the OSG OSM. Contributions are not just code, but can be any combination of documentation, testing, user support, code, code reviews, bug reporting, community organizing, project marketing, or numerous other activities that help promote and improve the OSG OSM and community.

Contributors can make casual code contributions or formal code contributions. In the case of casual code contributions, they will be subject to the acceptance of an ICLA. This form will not imply acceptance of their code and is intended to guarantee the integrity of the FOSS license being used in the project. The acceptance of their contributions will not imply project membership and will not grant participation in governance groups. Casual code contributions, even if they are merged/accepted by the MDG Lead and the TSC, will not be taken into account in the TSC renewal process.

Contributors do not need to be affiliated to an organization to use the software or provide casual code contributions. In the case of formal code contributions, the contributor has to belong to an organization that has signed the OSG OSM agreements to guarantee their adherence to the FOSS licenses being used in the project. These contributions will be taken into account to rank their organization as candidate in the TSC renewal process.

Contributors differ from users in the fact that they will have an individual contributor account in the project tools so that their contributions will be appropriately registered. Those users who contribute to the project through any of the mechanisms mentioned before will be considered Contributors.

3.3. Committers

Committers are code contributors who make sustained formal contributions to the modules. They have to belong to an organization that has signed the OSG OSM agreements to guarantee their adherence to the FOSS licenses being used in the project.

Committers can participate in different MDGs, contributing code to different modules. Code lines contributed by committers, and merged/accepted by the MDG Lead and the TSC, will be taken into account in order to rank their organization as candidate in the TSC renewal process.

4. DECISION MAKING

4.1. Voting

Some decisions about the project require votes on the project mailing lists or, if feasible, on other reliable means provided by the host organization. Votes, when casted in mailing lists, should be clearly indicated by subject line starting with [VOTE]. Votes may contain multiple items for approval and these should be clearly separated. Voting, by default, is carried out by replying to the vote mail, although, in some cases, the corresponding chair/lead may require the vote to be secret.

Voting may take four flavors:
- +1. "Yes," "Agree," or "the action should be performed." In the case of technical decisions, this vote also indicates a willingness on the behalf of the voter in "making it happen"
- +0. This vote indicates a willingness for the action under consideration to go ahead. In the case of technical decisions, this vote indicates that the voter will not be able to help.
- -0. This vote indicates that the voter does not, in general, agree with the proposed action but is not concerned enough to prevent the action going ahead.
- -1 This is a negative vote. On issues where consensus is required, this vote counts as a veto if binding. All vetoes shall contain an explanation of why the veto is appropriate. It may also be appropriate for a -1 vote to include an alternative course of action.

All participants in the project are encouraged to show their agreement with or against a particular action by voting. For TSC decisions, only the votes of TSC members are binding.
For technical decisions on the MDG, in case an MDG Lead initiates a vote, the votes of its committers are binding.
Non-binding votes (i.e. from members not belonging to the specific committee) are still useful for those with binding votes to understand the perception of an action in the community.

4.2. Approvals

In general, there are three types of approvals that can be sought:
- Lazy Consensus - Lazy consensus requires 3 binding +1 votes and no binding -1 votes.
- Lazy Majority - A lazy majority vote requires 3 binding +1 votes and more binding +1 votes than binding -1 votes.
- Lazy 2/3 Majority - Lazy 2/3 majority votes requires at least 3 binding votes and more than twice as many binding +1 votes as binding -1 votes.

From this description, it is clear that vetoes are only possible in a Lazy Consensus vote.

4.3. Leadership Group

Membership changes

New LG members

New vacancies in the LG might be proposed by an existing LG member through the LG mailing list. Once an LG Member proposes it, a new voting procedure shall be started in the LG in less than 2 weeks. The proposal should be accompanied by a brief rationale, and the role that the member would play in the LG.

Once the voting procedure starts, the decision shall be approved by Lazy Consensus (no vetoes) of the LG members in one week time. In case of rejection, no new voting procedures might be open for that purpose in less than 6 months from the rejection.

New vacancies in the LG will be covered by election.

Revoking an LG member

This procedure is only foreseen in those limited circumstances where a LG member interferes with the daily work of OSM.

Any LG member can propose to remove a LG member. The proposal shall be sent to the LG mailing list, accompanied by a rationale. A voting procedure will start and the decision shall be unanimous, excluding the affected LG member. Each LG member shall give one vote in favor of removal.

That decision will be brought to plenary to ratify it or reject it by simple majority.

Resigning as LG member

Any organization that is part of the LG can resign to be part from the LG at any time. The resignation shall be sent to the LG mailing list.

In order to be part of the LG again, the organization can do it through the established procedures for new LG membership.

Decisions

Modifying OSM Working Procedures

Any LG member can propose to modify these OSM Working Procedures at any time. Proposal of changes shall be sent to the LG mailing list, accompanied by a description of the change, the old text in the sections that will be modified and the new text (changes with tracking tool over the last version of the OSM Working Procedures are allowed).

Once received, a call for voting will be sent to the LG mailing list. The decision will require approval by Lazy Consensus (no vetoes) of the LG members.

Electing a Chair of the LG

Whenever the LG chairmanship is empty or after two years since its election, a new call for Chair of the LG will be opened. Any individual from the LG willing to be the Chair can submit his candidacy to the LG mailing list.

Once received all candidacies, there might be different situations:
- There are no candidacies. In such a case, a new call will be opened, until there is at least one candidacy.
- There is only one candidacy. The candidate will become eligible for Chair of the LG. The candidate shall be approved by Lazy Majority of the LG members.
- There is more than 1 candidacy. A voting process will start with those candidates. Each LG member can give 1 vote to 1 candidate. The candidate with the higher number of votes will be elected Chair of the LG. In case of draw, a new voting round will start involving only those candidates with a tie in the highest number of votes in the previous round.

Removing the Chair of the LG

Any LG member can propose a voting process for removing the Chair of the LG. The proposal shall be sent to the LG mailing list, accompanied by a rationale of the proposal for removing. Once received, a two-call process starts.
- A first call will be sent to the LG mailing list in order to decide if a removal voting process should take place. The decision will require approval by Lazy 2/3 Majority of the LG members.
- If approved, a second call will be sent to the LG mailing list in order to decide if the Chair of the LG is removed. The decision will require approval by Lazy Majority of the LG members.

If approved in the second call, the LG will open a call for electing the Chair of the LG. The removed Chair will be able to submit his candidacy to this new call.

Ratifying the TSC chair election

Whenever a new TSC chair is elected by the TSC members, the LG will open a call for ratifying that election. The TSC chair shall be approved by Lazy Consensus (no vetoes) of the LG.

In case the TSC chair is not approved by the LG, the decision will be communicated to the TSC, which will have to elect again a TSC chair. In the new elections, the previously elected TSC chair could be again selected by the TSC. In that case, the LG will open a second call for approving that election. In this second call, the decision can be ratified by Lazy 2/3 Majority of the LG.

Removing the TSC chair

Any LG member can propose a voting process for removing the TSC chair. The proposal shall be sent to the LG mailing list, accompanied by a rationale of the proposal for removal. Once received, a two-call process starts.

- A first call will be sent to the LG mailing list in order to decide if a removal voting process should take place. The decision will require approval by Lazy 2/3 Majority of the LG members.
- If approved, a second call will be sent to the LG mailing list in order to decide if the TSC chair is removed. The decision will require approval by Lazy Majority of the LG.

If approved in the second call, the TSC will open internally a call for candidates to TSC chair. The removed TSC chair will be able to submit his candidacy to this call.

4.4. TSC

Membership changes

Renewal of TSC membership

TSC membership is driven by the actual code contribution to the project. Since the number of TSC members is capped to a specific value, the renewal of TSC members will be based on contribution figures per organization that are calculated from the number of merged (approved) code lines (historical contributions in the last 3 releases).

After every new release is launched, with the only exception of the initial release derived from the code seeds, a process to renew the TSC will start. The contribution figure is then calculated for every organization that has committed code to the project from the beginning up to the date of the new release was launched. In order to guarantee manageable stability in the TSC leadership, the serving TSC chair is excluded from this process of automatic renewal.

In case that there are organizations obtaining a higher contribution figure than any of the TSC members, then a renewal voting process starts. This process will involve:

- Those non-TSC members whose contribution figure is higher than the lowest contribution figure of a TSC member. The TSC chair will contact those organizations and will ask for their willingness to be part of the TSC and, if they accept, they can propose an eligible candidate from their organization.
- Those TSC members whose contribution figure is lower than the highest contribution figure of an eligible non-TSC member. The TSC chair will also contact those organizations and will ask for their willingness to be part of the candidates for TSC election and, if they accept, they will propose an eligible candidate from their organization.

The number of free seats in the TSC is determined by the number of TSC members whose contribution figure is lower than the highest contribution figure of any eligible non-TSC member.

There will be as many voting processes as free seats. In every voting process, one TSC member will be chosen from the list of candidates enumerated above.

Every eligible organization shall send to the General mailing list the name of the individual (candidate) that will represent their organization in the TSC, a brief rationale on why the candidate should be in the TSC, and a short description of their contributions to the project.

In every voting process, all TSC members (current at that round of vote) and the non-TSC candidates can participate. They can give:

- +2 votes to one of the candidates or to none of them
- +1 vote to another candidate or to none of them[2].

The candidate with the higher number of votes will be declared TSC member.
Once a new TSC member has been elected, the voting process with the remaining candidates is repeated until the number of free seats in the TSC is zero.

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[2] In case an organization casted both +2 and +1 votes they should go to different candidates.

Resigning as TSC member

Any organization that is part of the TSC can resign to be part of the TSC at any time. The resignation shall be sent to the TSC mailing list and will be effective from that specific moment.

In order to be part of the TSC again, the organization can do it following the established procedures for new TSC membership.

Decisions

Electing the TSC chair

Whenever the TSC chairmanship is empty or after two years since its election, a call for candidates will be opened. Any TSC member willing to be the TSC chair can submit his candidacy to the TSC mailing list.

Once received all candidacies, there might be different situations:

- **There are no candidacies.** In such a case, the LG shall be informed. A new call for candidates will be opened, encouraging all TSC members to submit their candidacy. If no candidacies arrive, then all TSC members will become eligible for TSC chairmanship. A voting process will start with all TSC members as candidate. Each TSC member can give 1 vote to 1 candidate. The candidate with the higher number of votes will be elected TSC chair. In case of draw, a new voting round will start involving only those candidates in tie with the highest number of votes in the previous round.
- **There is only one candidacy.** The candidate will become eligible for TSC chair. The candidacy shall be approved by Lazy Majority of the TSC members.
- **There is more than 1 candidacy.** A voting process will start with those candidates. Each TSC member can give 1 vote to 1 candidate. The candidate with the higher number of votes will be elected as TSC chair. In case of draw, a new voting round will start involving only those candidates in tie with the highest number of votes in the previous round.

Once elected, the TSC chair shall be ratified by the LG following the procedure described as part of the LG decisions.

Resigning as TSC chair

The TSC chair can explicitly resign at any time. The explicit resignation shall be sent to the LG and TSC mailing lists and will be effective from that specific moment.

Choosing and prioritizing feature requests per release

With every new release, the TSC will receive from the End User Advisory Group a list and description of feature requests to be included in next release. The TSC shall discuss and prioritize them in order to be included in the next release, left for future releases or even discarded.

The TSC chair will decide, at his discretion, the way to discuss, discard and prioritize feature requests, always trying to reach the maximum consensus among the TSC members.

It shall be noted that the TSC is not forced to accept all feature requests, but it is required for TSC members to understand the feature requests from the End User Advisory Group, and the problems/use cases intended to be solved.

Creating a new MDG

MDGs can be created by the TSC at its discretion. Any TSC member can propose to create a new MDG. The proposal shall be sent to the TSC mailing list by a TSC member and shall include a rationale and at least 3 committers from different organizations participating in OSM (one of the committers shall belong to an organization that is part of the TSC).

The decision to create a new MDG shall be approved by Lazy Consensus (no vetoes) of the TSC members. Once approved, an MDG Lead shall be elected.

The TSC chair shall inform the LG in a timely manner about the main milestones during the process: the proposal to create a new MDG, the identification of at least 3 committers (1 belonging to an organization that is part of the TSC), the acceptance by the TSC members, and the final appointment of the MDG Lead.

Removing an existing MDG

Any TSC member can propose to remove an existing MDG. The proposal shall be sent to the TSC mailing list by a TSC member and shall include a rationale. The decision to remove an MDG shall be approved by Lazy 2/3 Majority of the TSC members.

The TSC chair shall inform the LG in a timely manner about the main milestones during the process: the proposal to remove an MDG, and the acceptance by the TSC members.

Electing MDG Leads

Whenever an MDG is created or an MDG Lead has resigned or been revoked, the TSC shall elect an MDG Lead. Any TSC member can propose an individual candidate for MDG Lead. Each of the candidates shall be accepted by Lazy Consensus (no vetoes) of the TSC members

The MDG Lead will be voted by the TSC members, who can give 1 vote to 1 candidate. There will be two rounds for voting:
- In the first round, if one candidate gets at least 3 votes and 2/3 of the votes, the candidate will be elected as MDG Lead. Otherwise, the second round will follow with the two most voted candidates.
- In the second round, the candidate with the highest number of votes will be elected as MDG Lead.

The TSC chair shall inform the LG about the elected MDG Lead.

Removing MDG Leads

Any TSC member can propose to remove an MDG Lead. The proposal shall be sent to the TSC mailing list by a TSC member and shall include a rationale. The decision to remove an MDG Lead shall be approved by Lazy Majority of the TSC members.

The TSC chair shall inform the LG in a timely manner about the main milestones during the process: reception of a proposal for removal, and final decision.

Approval of release candidate

Once the software composing the release is judged as sufficiently evolved, the TSC chair can call for a vote to approve the release candidate by Lazy Consensus.

In case the release candidate were not approved by Lazy Consensus, the TSC chair might call for a new vote after trying to address the comments from those who objected in the previous vote.

In case that, after a second TSC vote, the situation could not be unlocked, the TSC chair might exceptionally request the LG to allow the approval of the release by Lazy 2/3 Majority of the TSC. Authorizing this exception would require Lazy Consensus in the LG.

Other technical decisions

These OSM Working Procedures encourage decisions based on consensus of all the TSC members. In case of conflict, the TSC chair will drive the discussion, with openness and always trying to reach the maximum consensus of the TSC members. The TSC chair will decide, at his discretion, the best way to discuss openly the technical matters. In case that it is not possible to reach full agreement without any objections, the TSC chair might call for a voting process. In that case, the following guidelines are recommended:
- Critical decisions require high consensus with no objections. In such a case, approval by Lazy Consensus of the TSC members is recommended.
- Other decisions require consensus, but objections might be allowed. In those cases, approval by Lazy 2/3 Majority or Lazy Majority of the TSC members is recommended.

4.5. MDG

Membership changes

New MDG committer

A Contributor that makes sustained, welcome contributions to the project may be invited to become a Committer. The invitation will be at the discretion of the MDG Lead or a TSC member.

The Contributor has to belong to an organization that has signed the OSG OSM agreements to guarantee their adherence to the FOSS licenses being used in the project. This affiliation will be checked by the MDG Lead.

MDG committer access is by invitation only and shall be approved by a Lazy Consensus (no vetoes) of the active MDG committers.

Resigning as MDG committer

A Committer that is part of an MDG can explicitly resign to be part of the MDG at any time. The explicit resignation shall be sent to the TSC mailing list and will be effective from that specific moment.

A Committer that has not made any contribution in the last six months to an MDG will be declared as inactive and will be revoked implicitly as MDG Committer. To become an MDG Committer again, he/she shall be invited, following the established procedures for new MDG committers.

Decisions

These OSM Working Procedures encourage decisions based on consensus of the active Committers and MDG Lead. In case of conflict, the MDG Lead will drive the discussion, with openness and always trying to reach the maximum consensus of the active Committers in the MDG. The MDG Lead will decide, at his discretion, the best way to discuss openly the technical matters. In case that it is not possible to reach full agreement without any objections, the MDG Lead might call for a voting process. In that case, the following guidelines are recommended:

- Critical decisions require high consensus with no objections. In such a case, approval by Lazy Consensus of the Committers is recommended.
- Other decisions require consensus, but objections might be allowed. In those cases, approval by Lazy 2/3 Majority or Lazy Majority of the Committers is recommended.

5. OTHER RELEVANT ASPECTS

5.1. FOSS license

The FOSS license for any new module produced will be Apache 2. Proprietary licenses are considered out of the scope of the project.

5.2. Sponsorship

A Sponsorship Program is foreseen to be created so that corporations and individuals can contribute substantially through donations to the ongoing support of the OSG OSM. In return, the OSG OSM will officially acknowledge donations via various methods appropriate to the sponsorship level, including their logo and link on the web page, an official sponsor image to place on the sponsor's website, or other means that can be agreed at LG level.