ENGRAVE Publication, authorship, data access and membership policy
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This document outlines the ENGRAVE publication policy. Sections A and B apply to all papers submitted to refereed journals and Section C to all GCN/telegrams. All papers that include ENGRAVE data must abide by this policy and all members of ENGRAVE must agree to abide by the policy. The definition of an ENGRAVE paper is outlined below.

ENGRAVE encompasses VLT (including NTT from P103), HST, ALMA and the La Palma ITP for sources with dec < 30 degrees.

This is Version 5.0 of the policy which is in place for O3.

A. Authorship and co-authorship

The ENGRAVE policies for authorship on an ENGRAVE paper are as follows :

1. ENGRAVE papers will have alphabetical author lists and no other preferential identification of authors. A "*corresponding"* author will not be defined. One person will have to take responsibility for finalising, signing off that the paper is ready for submission and submitting. This will be the contact author, from the writing team. We expect this to be an EC member (to ensure accountability) but the "contact author" will not be identified as a lead, main or corresponding author in any way.
2. A writing team will be defined by the Executive Committee (EC) for each publication (and communicated immediately to all members). The definition of a paper and its data content and the publication strategy for each follow-up target will be decided by the EC in consultation with the leads of the Working Groups. We envisage papers which are split by time (e.g. first 5 days of campaign) rather than by data set (e.g. photometry vs spectra, optical vs NIR). However there will be exceptions (e.g. spectra-polarimetry is likely to be separate) and the EC will have the authority to decide on the strategy. We envisage a writing team of 3 – 4 ENGRAVE scientists per paper, but empower the EC to define on case by case basis. The use of latex sharing tools to construct the paper is required.
3. Co-authorship will be open to all ENGRAVE members[1]. To be a co-author, each member must specifically request and agree to be an author and provide a (short) justification of what the individual has done for the paper or the ENGRAVE collaboration This may also be a statement of what the person envisages doing (since we may produce author lists before the paper is finalised). There will be a spirit of providing means for co-authors to contribute/participate.
4. The spirit of co-author inclusion would be to allow members the opportunity to contribute. There are many means for this – proposal writing, Phase II, target selection, alerts, triggering, data reduction, data analysis, paper construction, paper review, working in the GC, EC, and working groups.

[1] As of April 2018, members are defined as the co-Is of the ESO proposals. Section G at the end of this document defines the Membership policy.

5. A mechanism to capture the requests and statements (e.g. online form, which will also capture acknowledgements) will be setup well in advance of O3 by the EC. The GC will approach journals and request that we are allowed to provide a paragraph of author contributions, along the lines of Nature. The GC will contact journals beforehand to be set up and define a set of journals that we will submit to. The Author contribution section will offer some visibility to those that made a significant contribution to that particular paper.
6. The rationale for this policy is for ENGRAVE to function as a working collaboration. Without the stress of considering who will be first author/corresponding author, we hope to foster a proper collaborative working relationship and to focus on writing rapid and high quality scientific papers. This rationale reflects the ENGRAVE founding principles.
7. This policy applies to all ENGRAVE papers – this includes VLT, ALMA, HST and La Palma ITP based papers. All Co-Is of the ALMA proposal will be offered membership of ENGRAVE. The WG-RADMM should work with the EC and GC to define the publication process and data exploitation of long wavelength proposals outside ALMA.

B. The publication process

When an ENGRAVE target is identified (defined as very likely to be the EM counterpart to a GW source, or a kilonova-like target within ~200 Mpc) and the ENGRAVE follow-up campaign starts, the EC should give some thought to the initial publication. A strategy for publication should be defined within a short time period of the trigger starting (see below for definition of timescales). While the working details will be left to the EC to define, the broad principles are as follows

1. We expect that papers will be written with fairly complete data sets (within a time window) rather than split by wavelength or photometry/spectra. This is not a strict definition, and some flexibility is envisaged. One could imagine a paper with the first 5-10 days of data (lightcurves and spectra) and then a follow-up paper with the full data until the object disappears from visibility. However a particularly faint object (e.g. expected for a NS-BH event) may require a different approach and waiting until all data have been collected.
2. As data are collected, all ENGRAVE members will have access to raw and reduced data products. The working groups will produce reduced, science ready data products rapidly and make those available to all members (see Data Access Policy below).
3. An Operations Team will be set up in advance (probably monthly basis). This will be managed by the EC who will be empowered with the authority to make executive decisions quickly. The Operations Team will deal with alerts, triggers, data handling and analysis.
4. A Writing Team will be setup in advance (also on a monthly basis). They will be ready to write papers on short timescale. They will have skeleton paper templates ready to work on before O3 starts. ENGRAVE's aim is to ensure a seamless transition from data reduction, analysis to writing the paper and the EC is expected to manage this. We expect the EC (with the first Writing Team) to define these templates for all to use. The Writing Team will coordinate with the EC and working group leads to make a plan for the data analysis, including any modelling. Although the writing team will have primary responsibility for putting the paper together, we envisage that the necessary publication-ready data-products and possibly models etc. will usually be provided by Working Groups.
5. We expect the writing team should be expert in the area of the scientific content of the paper. We aim to write high quality scientific papers that include some physical interpretation (as far as time allows), and not just "data" papers. We have enough modelling and theory expertise within ENGRAVE to do this. Setting up a writing team in advance, but with specific expertise implies somewhat orthogonal requirements but the EC should attempt to balance this. The EC should ensure that the Operations Team rota is capable of dealing with both multiple events within a month and also long periods without a trigger.

6. We recommend a “paper review team” who reads the paper in detail before submission at the level of a referee report and reports on a very short timescale to improve the science and quality of the paper.
7. The scientists on the operations rota will be chosen to match their skills with the tasks required. The EC will manage this process, and the GC will assist. Skills required are decision making, Phase 2 (triggering alerts), data reduction, analysis and modelling, figure creation, interpretation and writing the paper. Given our extensive plans for follow-up, there is a wide range of work that needs to be done.
8. An overleaf (or other sharing tool) will be created and all ENGRAVE members will have viewing access. The Writing Team, EC and WG leads (or their nominees) will have write access, any member may request write access if they have particular contributions that are not efficiently dealt with through sending comments. All members are welcome to review, read and send comments on the paper.
9. In addition to the expected ENGRAVE data papers, members and WGs are welcome to submit suggestions (to the EC) for parallel papers on extra aspects that are worthy of a separate paper. We encourage creative ideas. e.g. these can come out rapidly but of course must be ENGRAVE collaboration papers and abide by the process presented here. For simple cases when it is obviously in our scientific interests to pursue the novel ENGRAVE paper, the EC will run this process. For other cases where conflict or clashes may arise, the GC will arbitrate (see Point 21).
10. Once the paper is complete (it need not be fully submission ready, but complete enough that review is viable and useful) this version will be sent to all ENGRAVE members. Members must respond within a time defined by the writing team (which is not less than 4 days) requesting co-authorship and providing the sentence of their contribution (will be an online response form to capture information automatically). The paper will be posted on the private area of the ENGRAVE wiki, and a message to all@engrave-eso.org will be sent. The principle of ENGRAVE is that each author ***must*** specifically agree and request authorship and strict deadlines will be imposed.
11. While 4 days is a relatively fast turnaround timescale, we envisage cases were we would like to be even faster (e.g. first X-shooter spectrum of a NS-BH). The GC and EC will define an addendum to this policy for ***ultra-fast papers*** (those which require 1-3 day between data acquisition and publication) :
    a. These will be drafted in advance
    b. A process to sign up for authorship, in advance, for ultra-fast papers (only ultra-fast) will be put in place
    c. Writing team are given the authority to submit, on behalf of the pre-signed up authors. However we hope that 4-6 hours will be given to ENGRAVE to review.
    d. The EC or Writing team of the ultra-fast paper must alert all@engrave-eso.org that the paper is being drafted as soon as it starts.
12. This version (and any version of the overleaf doc) is strictly embargoed and must not be distributed outside ENGRAVE.
13. The paper review team will rapidly, critically and formally review the paper before submission at the level of referee reports. The paper review team must be ready, willing and able to respond within the 4 day turn around period.
14. After comments and review, the EC will inform the writing team if they think a further iteration is required or the paper can be submitted. If there are major changes (e.g. major conclusion changes) to the initial version, then it is expected that co-authors should receive a second opportunity to view the paper prior to submission. We expect that we will post to arXiv immediately on submission.

15. The journal's referee reports must be circulated to all co-authors. The revised version should be posted on the wiki with replies to the referee. A final link to the journal version will be kept on the ENGRAVE website.
16. All publications containing ENGRAVE data must include the acknowledgement : "Based on observations collected by the ENGRAVE collaboration at the European Organisation for Astronomical Research in the Southern Hemisphere under ESO programmes XXX.Y XXX, ……". The latest programme IDs will be on http://www.engrave-eso.org/data/
17. There will be single papers that present the ENGRAVE data as the original data source – ENGRAVE members may write their own papers based on these data, ***once the data are released (see Points 18 and 19).*** They may not write rival papers presenting the ENGRAVE data for the first time, on the same timescale as the ENGRAVE papers. ENGRAVE will aim at a comprehensive publication of all acquired data (to that point in time), to make sure this becomes by and large the reference data paper for the given particular source or list of sources (depending on time and character of the events).
18. Once the ENGRAVE paper APPEARS on arXiv, the data are officially "open" to all ENGRAVE members. Before this, ENGRAVE members should not work with the data with anyone else, nor share the data, nor work on their own papers. However from this point onwards (at time of arXiv publication), they may work with the data independently of ENGRAVE policies. Members must not make the data public nor allow it to be published before the timescales outlined in Point 19. It is essential that these additional papers cite the ENGRAVE papers as the original data source and do not present any ENGRAVE data for the first time. The circulation of these independent papers to the whole collaboration before submission to arXiv and/or to a refereed journal is encouraged.
19. We require a minimum period of 1 month between when the ENGRAVE paper is ACCEPTED to when an independent paper (which includes ENGRAVE data that you have proprietary access to) is submitted to a journal and arXiv. This is to encourage honesty and integrity, such that ENGRAVE scientists are not working on rival papers while having access to all the reduced data produced by ENGRAVE. This policy will be strictly enforced and those who violate will be ejected from the ENGRAVE collaboration and have all data access rights revoked (decided upon by the GC).
20. Once the ENGRAVE paper is PUBLISHED in a refereed journal, all reduced and raw data will be made fully public, for example through WISeREP, ESO SAF, the ENGRAVE website and/or other public repository.
21. We envisage there may be some exceptions to this standard publication route and we leave some flexibility open (at the discretion of the GC). One example is for collaborative papers (see section below on Collaborative Papers). Another example is to facilitate a deeper analysis, focussing on particular, specific aspects, or a new innovative idea. This could be refinements either based on acquisition of further multi-messenger information released at a later time (or acquisition of new (non-ENGRAVE) data as part of extensive monitoring). If members of ENGRAVE can suggest an analysis that is *significantly different from that envisaged for the primary ENGRAVE paper for an event,* and is also substantial enough to make a separate paper, they are encouraged to suggest the idea to the GC. If accepted, then this self-selected group would become the writing team for that paper, and all ENGRAVE rules would apply. In this case ENGRAVE scientists should not co-author multiple ENGRAVE papers that have different scientific conclusions, they should recuse themselves from the main ENGRAVE paper. If not accepted, then the team can still pursue the idea independently, while respecting the timescales on data release and paper submission outlined above. This Point 21 is different in nature to Point 9.
22. ENGRAVE will ensure that the data we release are scientifically valid and correct. This means calibrations (flux, wavelength, magnitudes) are correct and that we do not release erroneous data products. We will ensure these are righteous and correct data products.

23. If the EC can not agree on any particular issue, or requires advice and guidance then the GC will act as the final decision making body for ENGRAVE. The GC runs on a majority vote if there is no consensus.
24. Our current thoughts on possible conflicts and difficult situations are kept here as a guideline for the future:
    https://psweb.mp.qub.ac.uk/engrave-wiki/index.php/Conflict_Discussion

C. Authorship for Circulars and telegrams : GCN and Astronomer's Telegrams and TNS reports

GCN and ATels will have authors from the operations rota directly named and will also carry the words "on behalf of the ENGRAVE collaboration". As these are meant to be fast, the Operations Team (which will involve EC members) can submit these without delay.

D. Data access policies

The EC will ensure that the Working Groups are organised to reduce data rapidly and make the reduced data products available (through links on the ENGRAVE wiki) to the whole consortium. As soon as the reductions take place, the following will be posted

1. 1D flux calibrated, wavelength calibrated spectra (preliminary flux calibration)
2. Photometry tables. Reduced images do not need to be posted immediately, but the photometric measurements must be posted in easily accessible form
3. Final flux calibrated spectra – after photometry is available, and the spectra are corrected to photometric flux measurements, the adjusted spectra will be posted.

E. ENGRAVE links with the search and discovery teams

ENGRAVE will not carry out substantial search and discovery for the EM counterparts, but is primarily a follow-up programme. However we may use (for example) FORS2/HAWK-I for galaxy targeted searches if we believe the counterpart may be out of reach of 2-4m telescopes in the optical/NIR and that an 8m is required. We don't envisage a lot of time spent on this, but keep the option open.

We recognise the lead roles of ENGRAVE members in the search and discovery teams. However, all of these teams are intending to release their targets publicly and rapidly. Once the object is in the public realm, there is no need for any agreement to publish rapid follow-up GCNs by ENGRAVE.

If there is any rapid sharing of proprietary information between discovery teams and ENGRAVE before a target is made public then ENGRAVE (the operations team) will discuss simultaneous and coordinated submission of discovery and classification GCNs with the discovery team. This will be fast and should not hold up either team.

If we would like to publish together then it will fall under Section F (Collaborative Papers).

F. Collaborative papers

There are two ways in which we envisage collaborating with other teams:

1. The expectation is that we will have sufficient data to write scientifically viable ENGRAVE papers for all objects visible from Paranal/La Silla. But if for some reason the campaign fails to produce a useful and scientifically viable dataset, we may pursue "collaboration papers", to put together our data with others. This may also apply if members of ENGRAVE (or possibly non-members), have an important external data-set or analysis that would be enhanced with the addition of some ENGRAVE data. If this is sufficiently important and high-profile (e.g. the first discovery of a new counterpart; contributions to an LVC-led paper etc.) then such a collaborative paper will be considered. This may or may not require commitment of all data for a particular event (e.g. it might just involve contributing some early data). Proposals for a collaborating paper should be submitted by the EC to the GC for approval. If ENGRAVE were to lead (i.e. had the more extensive data set) then we would ask the collaborating team(s) to abide by our publication rules. If the other teams have the stronger datasets then ENGRAVE will provide co-authors on the same basis as our normal publication policy (on basis of contribution, which may be all ENGRAVE members who sign up to the paper) and we will abide by the other teams' policies.
2. We could foresee a discovery paper whereby an independent wide-field search and discovery team makes the first detection of a source and a minimal amount of ENGRAVE data would enhance that paper e.g. VISTA or VST make the first discovery and wish to write an independent discovery paper and include one X-shooter spectrum to "classify the source". ENGRAVE is open to this, and will request co-authorship on the basis of the above (i.e. those who contributed in some way to any part of the campaign on that particular object, not just the single shared data product. This may be all ENGRAVE members who sign up). We should aim to coordinate the paper submissions e.g. submit the discovery paper and first ENGRAVE paper on the object at the same time to arXiv.

G. Membership Policy

All Co-Is on the ESO proposals are ENGRAVE members. ENGRAVE membership entitles scientists to

1. Be on the all@engrave-eso.org list and any working group email list they request.
2. Access to the private areas of the web-pages and wiki.
3. Access to minutes of all GC and EC committee meetings.
4. Access to the data products as described above in Section D.
5. Request membership of the working groups.
6. Request co-authorship of papers on the basis of contribution as described in Section A.3 and A.4.

A list of members will be kept visible (publicly accessible) on www.engrave-eso.org

Additional members can be added. A short justification for membership and statement that the member will abide by the rules and policies in this document are required. In the case of senior independent scientists joining, they should define what they will contribute to ENGRAVE (such as complementary expertise) and what working groups they envisage being part of. We expect that new postdocs and students who are supervised by already existing members will be admitted frequently and the justification for their membership can be short.

New members may already be parts of other telescope proposals or other teams. We do not require new members (or existing members) to recuse themselves from those efforts but do require that they respect the publication and data sharing policy outlined here. More specifically they should not use ENGRAVE data or scientific information for the benefit of other external publications.

This should be sent to the GC for approval on a case by case basis with a rolling deadline of every 3 months (the dates will be advertised on the ENGRAVE website). Note that as of October 2019 (GC Meeting), we have paused the call for independent scientists, and we will review once our first paper is submitted.

H. Leaving ENGRAVE or moving institute

If an ENGRAVE independent scientist moves institute then there is no issue, unless they are moving to another institute with a major involvement in GW follow-up that is not within ENGRAVE. In that case, the GC require a written statement from the member to describe their intentions and if they want to remain ENGRAVE members how they forsee this working.

If students/postdocs of existing ENGRAVE members leave the group within which they were conferred ENGRAVE membership then one of following must happen

- If they are moving to another ENGRAVE "group" *AND* working as a postdoc directly under the management of an ENGRAVE independent scientist (e.g. student from Padova goes to postdoc position in Stockholm) then they should just inform the EC and the GC that they are continuing in their ENGRAVE work within the current bounds of ENGRAVE policies. This must be done in writing to the GC and EC (ENGRAVE governing council <gc@engrave-eso.org>, ENGRAVE executive committee <ec@engrave-eso.org>)
- If they are moving to another ENGRAVE "group" on an independent fellowship (i.e. in charge of their own scientific direction) then they should do the same as above - write to the GC and EC to state they want to continue in ENGRAVE respecting the policies (e.g. postdoc at Warwick gets Marie Curie fellowship at DARK to work on GW follow-up). We encourage independent fellowship holders to move within ENGRAVE.
- If they are moving to a group or institute to work as a postdoc with no ENGRAVE members or affiliation then their ENGRAVE membership ends and they must re-apply as an independent scientist. Their credentials will be revoked within 2 months of leaving the ENGRAVE institution should no independent scientist position be applied for or conferred. If their membership is not continuing then they are allowed to co-author any papers '"that are already started"' at the time of leaving, but no further papers.

This policy applies to all ENGRAVE members retrospectively, from the time ENGRAVE was formed.

I. Policy on ENGRAVE talks at conferences and meetings

If the GC or EC chairs are either invited to give talks specifically on behalf of ENGRAVE or are asked for suggested speakers that should be invited to represent ENGRAVE then they will bring this request to both the GC and EC. The EC can give a recommendation on who they think would be most appropriate and the GC will make the final decision (or approval of the suggestion). We envisage ENGRAVE members being asked to give talks on general ENGRAVE results/activity and on specific objects and events. The GC/EC's intention is to offer these opportunities to active and involved scientists.

ENGRAVE scientists may of course be invited to give talks because of their general scientific reputation in GW/multi-messenger astronomy rather than specific ENGRAVE involvement. While we encourage such talks to highlight ENGRAVE work, the invited speakers should be sensitive

to the fact that they are invited in a personal capacity rather than an ENGRAVE leadership role. Where there is doubt, we encourage the speakers to contact the GC (gc@engrave-eso.org).

If ENGRAVE scientists are applying for a contributed talk at a meeting to specifically present ENGRAVE results or plans, they should register their interest to present on this wiki page.

https://psweb.mp.qub.ac.uk/engrave-wiki/index.php/ENGRAVE_Talks

We hope that we will have ENGRAVE representation and talks (multiple talks ideally) at all the major conferences and meetings in this field. The GC will monitor the page, but if any scientist feels that they have significantly contributed to ENGRAVE and are not getting an opportunity to present they should immediately contact the GC. The wiki page is meant to keep communication open and allow us to have a fair distribution of credit through conference and meeting talks. We encourage coordinated submission.