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### Abstract

This document describes the collaboration policy of the German eROSITA Consortium


### Change Record

Issue	Date	Description of Change	Affected Pages
1	2012-07-24	New Document	All
2	2018-11-02	Revision of External Collaborators scheme, WG chairs	
3	2019-02-05	Include comments from AM, KN, PP	All
4	2019-03-15	Reviewed after StC meeting in Potsdam	All
5	2019-03-27	Included comments from Axel and Joern	
6	2019-04-02	Included final comments from StC	
7	2019-04-10	Final version for release	

### Distribution List

Organisation	Name	Organisation	Name	Organisation	Name
MPE	eRO doc. server				

### Approvals

Function	Name	Date	Signature
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Principal Investigator, Author	P. Predehl		

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## 1. SCOPE AND INTRODUCTION

This document summarizes and defines the management structure and basic rules of conduct of the German eROSITA Consortium (hereafter eROSITA\_DE), including regulation of access to the 50% portion of eROSITA data whose proprietary rights lies with the Max Planck Institute for Extraterrestrial Physics (MPE).

eROSITA\_DE is the Consortium responsible for the definition, management, planning, implementation, operation and scientific exploitation of the eROSITA telescope. The purpose of this document is to guarantee an effective, fair and transparent working environment for all members of the Consortium working towards a common goal of the successful technical implementation and scientific exploitation of the eROSITA telescope onboard the SRG mission.

This should be considered a working document, which will be revised as required by future developments. Revisions to the eROSITA\_DE Consortium Policy will be approved by the Principal Investigator (PI), based on the recommendation of the Steering Committee. Notwithstanding the opinion of the Steering Committee and the contents of this document, the PI's decision on matters of eROSITA policy shall be final.

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## 2. REFERENCES

### 2.1. Applicable Documents

N/A

### 2.2. Reference Documents

N/A

### 2.3. Acronyms

Specific acronyms used in this document are defined below:

CCB	Collaboration Coordination Board
DLR	Deutsche Zentrum für Luft- und Raumfahrt
eSASS	eROSITA Science Analysis Software System
GEC	Group External Collaboration
(I)EC	(Individual) External Collaborator
MoU	Memorandum of Understanding
MPE	Max Planck Institute for Extraterrestrial Physics
MPG	Max-Planck Gesellschaft
PI	Principal Investigator
PS	Project Scientist
SRG	Spektrum-Roentgen-Gamma
StC	Steering Committee
WG	Working Group

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### **3. MANAGEMENT STRUCTURE**

#### **3.1. Principal Investigator**

The Principal Investigator is appointed by the Director of the High Energy Astrophysics group at MPE, in consultation with DLR, to act as the lead scientist of the eROSITA project.

The PI takes ultimate responsibility for the completion and successful operation of the project and for reporting to external bodies (e.g. DLR, MPG). The PI oversees the implementation of the rules of collaboration within the eROSITA\_DE Consortium.

The PI may:

- Appoint the eROSITA Project Scientist;
- Appoint the members of the Steering Committee, and act as its Chair;
- Accept new members into the Consortium;
- Terminate the Consortium membership of scientists who are deemed not to have acted in a manner consistent with this document, or otherwise undertaken actions detrimental to the project;
- Sign Memoranda of Understanding (MoU) with third parties who wish to collaborate with the eROSITA\_DE Consortium for the scientific exploitation of the eROSITA data;
- Review the effectiveness of the Consortium regulations, and modify them as necessary, in consultation with the Steering Committee.

#### **3.2. Steering Committee (StC)**

The Steering Committee provides recommendations to the PI on matters of eROSITA policy. These include, for example, ratification or expulsion of members of the consortium, resolution of conflicts within the consortium, negotiations with partners at project level, etc.

The StC also advises and assists the PI as required in all aspects of the management of the project, including negotiations with DLR.

The StC meets as required (in person or by telecon/videocon), but at minimum twice per year. StC meetings will generally be convened by the PI, but can also be called by request of two or more StC members.

Ideally, the Steering Committee makes decisions by consensus. If the StC fails to reach consensus, the ultimate decision will be made by the PI.

The StC is appointed by the PI, and consists ordinarily of the PI, the PS, the Director of the MPE High Energy Group, the eROSITA Program Manager of each of the Core Institutes, the DLR officer responsible for eROSITA, plus such other individuals as the PI deems appropriate.

#### **3.3. Project Scientist (PS)**

The Project Scientist is appointed by the PI in order to coordinate the scientific activities of the eROSITA\_DE Consortium and ensure the maximal scientific return from eROSITA. The PS is chosen from the members at the Lead Institute (MPE, see Section 4.1.1).

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The PS oversees the scientific activities of the eROSITA\_DE Consortium, and is responsible for the management and effective operation of the Working Groups (see Section 3.4 below). The PS will appoint the WG chairs, in consultation with the PI.

The PS will be responsible for maintaining up to date a common, electronic, WWW-based archive of all submitted and proposed projects and publications making use of eROSITA\_DE data and preparatory works, as well as that of eROSITA-related presentations (see Section 5.4 below).

The PS will also be responsible for overseeing the process of evaluation and acceptance of proposals for external collaborations (see Section 4.4), funding application proposals, as well as for helping the StC and PI in reviewing the eROSITA\_DE membership.

The PI, PS and the list of StC members can be found in APPENDIX A.

### **3.4. Working Groups and their Chairpersons**

A “Working Group” (WG) is a team of scientific experts in a particular field (object classes, science tasks, etc.), which organizes and coordinates the work in this field. The goal is to have a streamlined and efficient way to exploit eROSITA’s scientific potential.

Access to eROSITA\_DE proprietary data products (see Section 5.1) is coordinated through the relevant Working Group(s), within the constraints of data rights policy outlined in this document.

WGs are responsible for identifying, approving and coordinating scientific projects (eventually leading to publications) that make use of eROSITA\_DE proprietary data (see Section 5.4 below).

Overall coordination of the WGs is provided by the PS, who appoints the Chairs of the WGs in consultation with the PI, and by the Collaboration Coordination Board (see Section 3.5 below). Each WG will have one chairperson, and up to two deputies.

Chairs of the WGs shall be chosen from the group of Senior Scientists of the eROSITA collaboration. They will take responsibility for calling meetings and/or telecons at such intervals, as they deem necessary for the successful operation of the WG.

The Chairs act as the contact point between the WGs and the PS, and provide recommendations for new WG members. All changes in WG membership shall nonetheless be reviewed and approved by the StC and the PI on a yearly timescale.

WG chairs, in consultation with the WG, review Individual External Collaborator proposals (see 4.4) and funding/grant applications (see 5.2) that require access to eROSITA data for projects falling within the specific scientific domain of the WG. Once endorsed by at least one WG, the proposals are reviewed by the CCB (see 3.5) for further assessment of possible cross-WG conflicts, and finally approved by the PS.

Working Groups may organize into subgroups, as required.

Senior Scientists of the eROSITA\_DE Consortium (as defined in Section 4.2 below) have the

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right to join *any* eROSITA WG. It is, however, understood that WG membership is intended only for those individuals actively working on that specific science topic and/or technical task.

As a rule, Member Scientists shall be able to join at most *two* scientific and *two* infrastructure Working Groups. Exceptions to this rule are possible, and will be agreed upon by the PS in consultation with the relevant WGs, based on a written justification presented by the member scientist in question.

The current list of the eROSITA\_DE Working Groups and their chairpersons can be found in APPENDIX B.

### 3.5. Collaboration Coordination Board

The Collaboration Coordination Board (CCB) advises and supports the PI and the PS concerning scientific matters and collaboration policies.

The CCB consists of the PI, the PS and one member for each Working Group (appointed by the chairs of the WGs). If not all institutes (Core and Associated) are represented in such a group, the respective institute Program Manager or Lead Scientist can name a CCB member “ex officio”.

The Chair of the CCB is elected by its members, and remains in charge for a period of two years.

The CCB has the following tasks:

- Draft the Code of Conduct of the Consortium;
- Review, after WG endorsement, grant proposals that require access to eROSITA data, and check for possible cross-WG conflicts (see Section 5.2 below);
- Periodically evaluate Individual External Collaborator proposals and their renewal (see Section 4.4 below);
- Advise the PI and the PS on Key papers (see 5.4.3) and overall scientific matters;
- Organize the regular Consortium meetings, together with the PS and the Host institute Program Manager.

The CCB usually meets (remotely) on a monthly basis.

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## 4. PARTICIPATION IN THE EROSITA\_DE CONSORTIUM

### 4.1. Participating Institutes

#### 4.1.1. LEAD INSTITUTE

The lead Institute for eROSITA is the Max Planck Institute for Extraterrestrial Physics. The lead institute provides the PI and PS, the project management, and co-ordinates the activities of the other participating Institutes with respect to instrument development (hardware and software) and scientific exploitation, to the extent that this is done by the PS.

#### 4.1.2. CORE INSTITUTES

The following Institutes, listed in the original eROSITA proposal, and recipients of DLR funds allocated for developing, building, testing all necessary hardware, software and infrastructure needed for the eROSITA telescope, are designated as the “Core Institutes” of the eROSITA\_DE Consortium:

- *Dr.Remeis Sternwarte Bamberg - Erlangen Centre for Astroparticle Physics (ECAP)*
- *Hamburger Sternwarte, Universität Hamburg (UHH)*
- *Institut für Astronomie und Astrophysik Tübingen (IAAT)*
- *Leibniz-Institut für Astrophysik Potsdam (AIP)*

The eROSITA Program Managers at Core Institutes shall represent their institute on the Steering Committee (see Section 3.2). They have the responsibility for the delivery of hardware, software or other products as agreed and required by the project and the PI.

Individual scientists that have one of the Core Institutes as their first affiliation will in general be offered membership of the eROSITA collaboration if proposed and supported by the Program Manager or by any other Senior Scientist at the Core Institute, unless the PI considers there to be a legitimate reason to exclude them. Members of a Core Institute who wish to become members of the Consortium, but do not have support of the local Program Manager or a local Senior Scientist, may request support from the chair of the Working Group they wish to work with. If such support is granted, their request will be evaluated by the PI for approval.

#### 4.1.3. ASSOCIATED INSTITUTES

The following institutes are “Associated Institutes” within the collaboration:

- *Argelander-Institut für Astronomie and University of Bonn (AlfA)*
- *Ludwig Maximilian Universität München (LMU)*

The eROSITA Lead Scientists at the Associated institute will report to the StC and PI all changes in membership. They will appoint a representative of the Institute in the CCB.

The Lead Scientists for AlfA and LMU are T. Reiprich and J. Mohr, respectively.

Individual scientists from the Associated Institutes may be appointed as members of the eROSITA consortium, if recommended by the StC and approved by the PI.



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## 4.2. Consortium Membership

The eROSITA\_DE consortium comprises the StC, and the members of the Working Groups, whether they are Senior Scientists or Member Scientists (see below).

The people (scientists and engineers) who contribute to the designing, manufacturing, testing and health monitoring of eROSITA constitute the “Instrument team”. Instrument team members are not automatically members of the Consortium, but they have the right to sign instrument papers, or “key” papers, following the PI’s recommendations (see 5.4). The PI maintains a list of all members of the Instrument team, which is made available to the whole collaboration in a dedicated Wiki page.

The eROSITA\_DE Consortium membership list will be revised by the StC, generally once per year. During such revisions the PI can appoint new members of the consortium, or revoke membership (for reasons such as prolonged inactivity, departure from a consortium Institute, violation of policy, scientific misconduct etc.). The StC is expected to deliberate and make recommendations to the PI in regard to changes in the consortium membership.

The current list of eROSITA\_DE Consortium members can be found in APPENDIX C, and will be available electronically as part of the Publication Archive (see 5.4.1). The PS is responsible for keeping up to date the list of Consortium Members; changes to such a list do not constitute a formal modification of this policy document.

There are three kinds of memberships for the eROSITA\_DE Consortium WGs:

### a) Senior Scientists:

Senior Scientists of the eROSITA\_DE Consortium are scientists who spend a substantial amount of their time actively working towards the definition, implementation, operation and scientific exploitation of eROSITA. Senior Scientists are initially identified and appointed by the PI. Proposals for new Senior memberships must be presented formally to the StC and be sponsored by at least one member of the StC and at least one WG chair, provided they are not the same person.

Senior Scientists:

- *Share the scientific leadership of the Consortium.*
- *Join and participate in the WGs activities.*
- *Have access to eROSITA\_DE validated data products, and the right to work on those data in an unrestricted manner.*
- *Propose and lead to completion scientific projects that make us of eROSITA\_DE proprietary data, and publish the results in a manner consistent with the publication policy.*
- *Propose junior scientists (students or postdocs) working under their direct supervision for membership and appointment to the WGs, who can then also access the eROSITA data needed for their project, and lead papers. Responsibility for the proper conduct of these scientists lies with the Senior Scientists, and their membership shall in general be terminated if they cease to work under the supervision of the Senior Scientist (e.g. if they leave the Institution). Senior Scientists shall be responsible for keeping the Project Scientist informed of such changes.*

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- *Promote eROSITA and its science outside the consortium.*
- *Strive to bring resources (e.g. data, equipment, funding, personnel) into the consortium, which further the scientific aims of eROSITA.*
- *Assist the PI, PS or StC with project-related matters when called upon to do so.*
- *When requested, submit an activity report to the PS and the relevant WG chair, describing their eROSITA-related activities for the past year, and plans for the upcoming years, and ensure that such activity reports are also submitted for junior scientists they sponsor into the consortium.*

#### **b) Member Scientists:**

Scientists whose first affiliation is one of the *Participating Institutes* of the eROSITA\_DE Consortium (as listed in Section 4.1 above) may be proposed by a Senior Scientist as Member Scientists of the eROSITA\_DE Consortium.

Member Scientists:

- *Join and participate in the WGs.*
- *Propose projects to the WG and enjoy access to eROSITA\_DE validated data products for those projects.*
- *Lead to completion those scientific projects and publish the results in a manner consistent with the publication policy.*
- *When requested, submit an activity report to the PS and the relevant WG chair, describing their eROSITA-related activities for the past year, and plans for the upcoming years.*

The rights and interests of Member Scientists within the collaboration shall in general be considered subordinate to that of Senior Scientists.

#### **c) Members at large (MaL):**

Scientists whose first affiliation is *not* one of the *Participating Institutes* of the eROSITA\_DE Consortium (as listed in Section 4.1 above) may be granted by the PI “Members at Large” status, based on a written justification submitted to the StC via the relevant WG Chair, and with the approval of both.

Members at large will be scientists whose unique skills and resources are deemed valuable for the Consortium, or former members leaving the Consortium, who have made an exceptional contribution to the eROSITA project during their time at a Consortium institution.

Consortium membership for Members at Large will be time limited, for a period of three years. After this period, MaL may be granted by the PI renewal of their membership with a written justification submitted to the StC via the relevant WG Chair, and with the approval of both.

Members at Large will:

- *Join and participate in the WGs.*

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- *Propose projects to the WG and enjoy access to eROSITA\_DE validated data products for those projects.*
- *Lead to completion those scientific projects and publish the results in a manner consistent with the publication policy.*
- *When requested, submit an activity report to the PS and the relevant WG chair, describing their eROSITA-related activities for the past year, and plans for the upcoming years.*

The rights and interests of Members at large within the collaboration shall in general be considered subordinate to that of both Senior Members and Member Scientists. Members at Large cannot be Senior Members of the Collaboration.

#### **4.3. General rights and responsibilities of eROSITA\_DE Consortium Members**

Members of the eROSITA\_DE Consortium are expected to comply with the rules set up in this document, including the publication policy and the Code of Conduct. Any infringement of such rules, or other misconduct, may lead to cancelation of the eROSITA\_DE Consortium membership.

eROSITA\_DE Consortium members are able to access and publish eROSITA proprietary data. In addition, eROSITA\_DE Consortium members will:

- have access to the eROSITA\_DE restricted access web-pages (wiki pages, etc.);
- have access to the Publications Archive (see Section 5.4 below);
- be invited to eROSITA\_DE Consortium meetings;
- have access to eROSITA simulated data;
- be authorized to make known their membership in the eROSITA\_DE Consortium in any funding and/or research proposal; members shall nonetheless inform the PS and the relevant WG chair(s) of any funding and/or research proposal based on the exploitation of proprietary eROSITA\_DE data in the research area of competence of that WG;
- promote eROSITA and its science to the outside world;
- protect the integrity of the eROSITA data and, specifically, neither grant nor permit access to those data to unauthorized individuals;
- inform the relevant WG or WGs about their eROSITA-related scientific activities;
- announce any PhD thesis that make use of eROSITA\_DE proprietary data, as well as any eROSITA preparatory work, to the Consortium in sufficient time to ensure adequate protection for the time period of the PhD;
- make proper acknowledgment and appropriate references to the eROSITA\_DE Consortium in scientific papers, presentations, technical notes web sites and other publications.

Members of the eROSITA\_DE Consortium may not participate in research projects that make use of proprietary eROSITA data outside the eROSITA\_DE collaboration, unless authorized to do so by the PI.

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Data products, tools, and codes produced or developed by consortium members for the purposes of an eROSITA project or under the auspices of collaboration shall be made available to the whole collaboration, with the understanding that any use of such material shall be appropriately rewarded (e.g. via paper authorship), and will not be distributed outside the collaboration.

Membership of the eROSITA\_DE Consortium will, under normal circumstances, terminate if a member moves away from a Participating Institute. Ex-consortium members will be permitted to finish work that has been started while at a Consortium institute, within a maximal period of one year. Members leaving the Consortium, who have made an exceptional contribution to the eROSITA project during their time at a Consortium institution, or with unique expertise, may be considered for continued membership (as “members at large”, see 4.2) based on a written justification submitted to the StC via the relevant WG Chair, and with the approval of both. In the justification, both the quality and the quantity of the past contribution will be evaluated, together with the commitment to contribute to the activities of the consortium in the future.

This procedure also applies to former Consortium members who retire.

#### **4.4. External Participants**

External participants are not members of the eROSITA\_DE Consortium, but may none the less access and work on eROSITA data in collaboration with Consortium Members. External participation may take two forms:

##### **a) Individual External Collaborators (IEC):**

Individual External Collaborators are scientists who are not Consortium members, but who are nonetheless permitted to work on eROSITA\_DE proprietary data products, contribute to pre-launch activities, lead projects and author related papers. IECs are approved by the PS upon request and recommendation of the relevant Working Group chair(s) and in consultation with the CCB.

An IEC is typically an individual but is understood also to include an individual and a PhD student working under their direct supervision.

IEC requests are evaluated based on a written proposal. These should have defined aims, scope and duration, and specific outputs/deliverables, typically a scientific paper or papers. IEC proposals must also be submitted for non-members of the Consortium who wish to co-author publications led by a consortium member based on eROSITA\_DE proprietary data. Proposals may also be submitted for projects initiated by the IEC.

All IECs must be sponsored by an existing consortium member, who presents the IEC proposal for consideration. The sponsoring member must be involved in the scientific work of the IEC and any resulting publication(s), and is responsible for ensuring the IEC and their project adhere to the consortium rules. IECs may also be submitted without a sponsoring consortium member. In this case the WG chairs will assign an appropriate sponsor or sponsor(s) from within the consortium to work with the IEC. The rights and scientific interests of External Collaborators shall be subordinate to those of Consortium members.

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IEC proposals will be evaluated by the relevant WG Chair(s), in consultation with the WG to ensure there is no conflict of interest. The WG chairs may suggest additional participants or collaborators in the project in addition to the sponsor(s). Other consortium members will be permitted to join the external collaboration project and become an author of any consequent publications should their contribution merit authorship, consistent with the publication policy. The PS grants IEC status upon recommendation of the WG chair(s) and in consultation with the CCB, to ensure there are no remaining conflicts with other Working Groups.

The CCB should review periodically the status of IEC and the progress of their activities. When requested to do so, IEC shall submit reports to the PS and the relevant WG chair(s) describing their activities related to the use of eROSITA\_DE proprietary data.

IECs will typically be granted for a period of one year, with the possibility of renewal/extension. Renewal requests are the responsibility of the IEC and/or the sponsoring member and IEC status will lapse by default in the absence of such a renewal proposal. The sponsor may nonetheless apply for renewal of IEC status that has lapsed with the agreement the WG chair(s).

Research projects and publications led by IECs will be submitted to the Publication Archive by the sponsoring Consortium member. If he/she has left the Consortium, a new member will act as liaison for the External Collaborator, and will be responsible for uploading and updating EC-led publication in the Publication Archive.

As per general policy, IEC may not participate in research projects that make use of proprietary eROSITA data outside the eROSITA\_DE collaboration (i.e. work at the same time on Russian proprietary data), unless authorized to do so by the PI.

Collaborative projects of scope greater than that described above will need special consideration (see point b) below).

**b) Group External Collaborators:**

Members of large collaborations with broad synergies with eROSITA (e.g. very wide area follow-up etc.), as well as groups of scientists larger than those covered by the IEC policy interests may be able to collaborate with eROSITA\_DE scientists for joint projects via Group External Collaborations (GEC). There must be a clear benefit to the eROSITA consortium for the GEC to be approved, typically access to or use of proprietary data from the complementary survey or for other tools and deliverables that are deemed useful by members of the eROSITA\_DE collaboration (numerical simulations, analysis software, and techniques, source catalogues, multiwavelength data, etc.).

External Group Collaborations are regulated by a MoU between the eROSITA\_DE project and the external project.

The PS and PI are responsible for carrying out negotiations, but can appoint other Consortium Members to aid in this task. CCB members should be informed at the earliest convenience about ongoing negotiations and will provide advise to the PI and

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PS on the matter. The PI ultimately signs the necessary MoU between the eROSITA\_DE and any other scientific consortium/collaboration.

A typical working model would allow members of eROSITA\_DE or the external collaboration to propose projects which utilize eROSITA data and data or products provided by the external project as a key element of the research. Such projects should be approved by the eROSITA WG chair and their counterparts in the external collaboration, or some other authority such as a collaboration committee, as specified in the MoU. Members of the external collaboration do not become members of the WG.

Exchange of data is not typically envisioned, but is possible if deemed useful or necessary. Any MoU should establish clearly the rights and obligations of the collaborating teams once the data from either side are published or become public.

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## 5. EROSITA\_DE DATA RIGHTS AND PUBLICATION POLICY

### 5.1. Data rights

According to the detailed agreement between the German and Russian Space agencies (DLR and Roscosmos, respectively) the right of access and scientific exploitation of 50% of the eROSITA data during its proprietary period lies with MPE. This is presently defined as the portion of the sky westwards of the great circle passing through Sgr A\* and the Galactic poles.

MPE takes responsibility for the provision of validated data products (e.g. event files) to the eROSITA\_DE Consortium during the proprietary period.

Access to raw (non-validated, telemetry) data is *not* automatically granted to all Consortium members, but can be granted by the PI to any member of the Consortium if this is deemed useful for the advancement of the project.

Senior Scientists of the eROSITA\_DE Consortium shall have unrestricted access to and use of the eROSITA\_DE validated data products, for uses that are compliant with the rules described in this document.

Member Scientists of the eROSITA\_DE Consortium shall have access to eROSITA\_DE validated data products, for specific uses that are authorized by the Working Group in the context of well defined, approved projects.

All Consortium members must comply with the eROSITA publication policy when disseminating eROSITA data in journals, conference papers, press releases or other literature, and in talks and presentations, or web sites.

External collaborators, whether individuals or members of collaborating groups, typically do *not* have direct access to eROSITA data and work with those data via their eROSITA\_DE sponsor(s) or collaborator(s). Data access may nonetheless be granted to these individuals by the relevant WG chair, if deemed necessary or desirable for the success of the project. Such access will apply only to those data that are necessary for the completion of the project that the external collaborator is actively working on, and based on which their project proposal was originally accepted, for the limited time necessary to complete that project.

### 5.2. Grant/funding proposals

Consortium members and External Collaborators may submit grant proposals to get funding to work on eROSITA\_DE proprietary data.

Scientists wishing to submit a grant application to get funding to work on eROSITA\_DE proprietary data must satisfy two conditions: (i) they should be authorized to carry out the science investigation they propose (i.e. no conflicts should emerge with members' projects), and (ii) they should be allowed to use eROSITA data that are necessary for the completion of the projects described in the proposal.

In order to secure this, proposers should contact the relevant WG chair(s) well in advance to proposal submission. This is especially true for those projects that have not already been approved by any WG. The WG(s) evaluate the scope of the proposal, and endorse it, or not. Endorsed proposals are forwarded to the CCB, which reviews and recommends them for approval to the PS. As a guideline, a period of 8 (eight) weeks before proposal deadline should be sufficient to guarantee the procedure can be brought to completion.

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Scientists outside of the Consortium who are not External Collaborators, will first have to obtain External Collaborator status (either as individuals or groups), as described in Section 4.4. This may require an even longer lead-time than the aforementioned 8 weeks.

As a rule, perspective members should not use eROSITA\_DE proprietary data merely as a mean to guarantee additional resources for themselves and for their group, but rather funding proposals should serve to provide resources to the eROSITA\_DE Consortium.

### 5.3. Software distribution and access

All project-funded software developed for the reduction, calibration and validation of eROSITA data as part of the eROSITA SASS (Science analysis Software System; eSASS), as well as access to the NRTA (Near Real Time Analysis) Interface will be available to all members of the collaboration as soon as it is verified. Regular updates and upgrades will be announced and distributed to all the Consortium members.

Consistent with 4.3 above, all other software developed within the Consortium for the benefit of scientific investigations based on eROSITA data shall be shared freely with Consortium members. Following standard scientific practice, such software should generally be made available publicly with the publication of the results obtained. The PS shall make available a Consortium-wide software repository to all members to facilitate this process.

### 5.4. Publication policy

Unless specified otherwise, the rules contained in this Section apply to all publications, which use eROSITA\_DE proprietary data, as well as on data taken with the eROSITA telescope during the commissioning, calibration and Performance Verification periods. This includes: papers submitted to electronic archives and refereed journals; scientific or technical books or book Sections; graphical or tabular materials or discussions of results, in electronic or hardcopy form, that are based on the analysis of eROSITA\_DE proprietary data and are generally accessible to non-eROSITA\_DE Consortium Members.

#### 5.4.1. Publication Coordination

All Scientific and Technical projects that may lead to publications need to be approved by the relevant Working Group (or Working Groups) Chairs before submission to the Publications Archive (see below). Each WG can choose the preferred method used to reach agreement on publications approval.

Working Groups should not unreasonably withhold permission for a project or a publication, but should check for conflicts and/or overlaps between groups working on the same or similar topics. Conflicts arising between working groups should be resolved by the Collaboration Coordination Board if possible, or, if not, by the Steering Committee. In case a consensus is not reached in the StC, the ultimate decision rests with the PI.

The project leader/lead author, or their sponsor in the case of an external lead, must ensure that publications follow the publication process outlined in Section 5.4.3 below. To aid in this process, the PS will maintain a common electronic WWW-based archive of all scientific and technical publications of the eROSITA\_DE Consortium. This archive shall be accessible to the members of the eROSITA\_DE Consortium only.



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#### 5.4.2. Authorship

Co-author lists of scientific and technical papers are up to the project-leader (usually the first author of the paper) and follow normal scientific practice. It is understood that any scientific paper will include in its author's list any individual who has contributed to the scientific analysis presented.

In addition, any member of the eROSITA\_DE Consortium who has access to the Publications Archive may, at any stage of a research project, request that her/his name be added to the list of authors, with the presumption that permission will be granted if she or he has made any significant contribution to the specific research project.

Anyone who has been placed on a paper's author list may make a request to the paper's team that her or his name be removed from the paper, and it shall be removed.

Any conflict regarding the co-authorship of scientific and technical papers should be resolved by the CCB, or, if the conflict cannot be resolved, may be referred to the StC, or, ultimately, by the PI, if no consensus is reached.

#### 5.4.3. Publication procedure

##### a) Scientific and Technical Papers:

As soon as a project that may lead to a publication has been identified and approved by a WG, the team of scientists carrying out the project should identify a project leader (usually the prospective first author of the proposed paper), who must then submit to the Publications Archive a project title, a list of current project members, and a brief abstract of the intended project. An electronic announcement will be made to all members of the Collaboration, including all other WG chairs, who will have then the possibility of raising any issue of scientific conflict to the CCB.

When a draft of any paper written as a result of an approved project's work is ready, it should be posted to the Publications Archive as a "pending" paper, indicating the journal to which the paper will be submitted. An electronic announcement (email) will be sent automatically to all eROSITA\_DE Consortium members. They have then three (3) weeks to read the pending paper, make comments, request co-authorship, etc. During this period, the PS should also check that the authorship, list of references and acknowledgements fairly represent the contributions made to the publication.

The authors revise the paper according to the comments and suggestions of the Consortium. At the end of the three-week period, or at the end of the revision process (whichever is longer), the final version of the paper can be submitted to a journal and posted to the Publications Archive. As a rule, papers in refereed journals should be posted on the arXiv only upon acceptance by the journal.

As soon as the paper has been submitted to a journal, the leading scientist should upload it to the Publications Archive as "submitted". Nonetheless, the paper is not considered public (and the results it contains cannot be disseminated outside the eROSITA\_DE Consortium) until the project leader for that paper agrees it to be so by flagging it as "public" in the Publications Archive.

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b) eROSITA Key papers:

Those papers that require a larger team effort and/or address key scientific questions that drive the eROSITA design (e.g. catalogues, major cosmology papers, etc.) will be classified as key papers. The PI, upon consultation with the CCB, reserves the right to identify those key papers at the appropriate moment in time, and in any case early enough before substantial amount of work has been made towards the completion of paper, as well as decide the authorship list thereof. At the discretion of the PI, the authorship of such papers is expected to be expanded to include those individuals who have made critical contributions to the overall success of eROSITA (e.g. via their work on the eROSITA hardware, software, operations etc.).

c) Colloquia, Conference Presentations and Conference proceedings

All oral or display presentations that make use of eROSITA\_DE proprietary data, as well as technical notes, simulations, commissioning data and pre-launch activity reports, should be published as internal documents on internal web-pages (wiki, etc.) directly accessible to Consortium Members only.

In oral or display presentations, colloquium or conference speakers and presenters may, upon consultation with the PI and the PS, make use of unpublished eROSITA\_DE results, provided they are authorized to do so by the leading author of a pending or submitted paper. This policy also covers digital presentation slides published on conference websites soon after speakers have delivered their presentations. In such cases, only material presented in public can be posted to conference websites (i.e. extra slides not shown in public and containing unpublished results must be removed).

d) Theses

All theses (BSc, Master and PhD) for which eROSITA\_DE data play an essential role must be announced to the Consortium (see Section 4.3 above). It is a responsibility of the PS and of the relevant WG chair(s) to ensure adequate protection of the scientific projects, which are part of a PhD thesis. Protection of the interests of PhD students within the collaboration may over-ride other aspects of the collaboration policy at their discretion.

e) Time-critical information

eROSITA will detect time-variable events and/or objects for which timely dissemination to the broader astronomical community will pay big scientific dividends. Any time-critical event detected within the eROSITA\_DE data will be reported to the collaboration as a whole, and if appropriate to the broader community through IAU Circulars, Astronomer's Telegrams, and the like. Relevant finding charts, positions, and photometry drawn from the eROSITA data set can be released. Authors aiming for the publication of time-critical results can also request the PI and PS to grant a shorter internal review period, if the scientific dividends are high. Such cases will be dealt with on a case-by-case basis by the PI and PS.

Collaboration members who wish to regularly release substantial amounts of time-critical data must request approval from the PI. Upon approval, the project must be posted to the Publications Archive under the category of "On-line Catalogue". At this point the project falls under the rules governing Scientific Publications (three week posting period, authorship rules).

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## **6. APPENDIX A: EROSITA\_DE MANAGEMENT**

**Principal Investigator:** Peter Predehl (MPE)

**Project Scientist:** Andrea Merloni (MPE)

### **Steering Committee:**

- Chair: Peter Predehl (MPE, eROSITA PI)
- Axel Schwobe (AIP)
- Jürgen Schmitt (UHH)
- Andrea Santangelo (IAAT)
- Jörn Wilms (FAU/Bamberg)
- Andrea Merloni (MPE, Project Scientist)
- Kirpal Nandra (MPE, Head of High Energy Group)
- Thomas Mernik (DLR, ex officio)

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## 7. APPENDIX B: WORKING GROUPS AND CHAIRS

List of eROSITA\_DE Working Groups and their respective Chairpersons (and co-chairpersons) as of March 2019.

a) Science Groups (chairpersons, in boldface; and their deputies):

- Solar System (**K. Dennerl**, MPE)
- Stars (**J. Robrade**, J. Schmitt (deputy), UHH)
- Galactic Compact Objects (**A. Schwobe**, AIP; V. Doroshenko (deputy), IAAT)
- SNR, ISM, Diffuse Galactic Background (**M. Freyberg**, MPE; W. Becker (deputy), MPE; M. Sasaki (deputy), FAU) [valid for 2019]
- Normal (non-active) Galaxies (**F. Haberl**, MPE)
- AGN (**K. Nandra**, MPE)
- Cluster of Galaxies and Cosmology (**T. Reiprich**, AlfA; E. Bulbul (deputy), MPE; J. Mohr (deputy), LMU)
- Time Domain Astrophysics (**J. Wilms**, FAU/Bamberg; A. Rau (deputy), MPE)

b) “Infrastructure” Groups (and chairpersons):

- Coordination of multi-wavelength follow-up (**M. Salvato**, MPE)
- Data analysis, source extraction, catalogs (**H. Brunner**, MPE)
- Calibration (**K. Dennerl**, MPE)
- Background (**M. Freyberg**, MPE)