European Organisation for Astronomical Research in the Southern Hemisphere

Programme: Instrumentation Programme (INS)

Project: SoXS

NTT/SOXS Operation Policies

Document Number: ESO-641350

Document Version: 1

Document Type: Policy (POL)

Released On: 2026-01-09

Document Classification: Public

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Change Record from previous Version

Affected Section(s)	Changes / Reason / Remarks
all	First version

Contents

1. Introduction

1.1 Scope

This NTT/SOXS operation policies document regulates the access to the SOXS instrument between the consortium GTO and PI-run community programmes.

1.2 Definitions and Conventions

1.2.1 Abbreviations and Acronyms

The following abbreviations and acronyms are used in this document:

AD	Applicable Document
ESO	European Southern Observatory
GTO	Guaranteed Time Observations
NIRPS	Near Infra Red Planet Searcher
NTT	New Technology Telescope
OB	Observing Block
OPC	*Observing Programmes Committee*
PIP	Paranal Instrumentation Programme
QC	Quality Control
RD	Reference Document
RPM	Rapid Response Mode
SoXS	Son of X-Shooter
STC	Science and Technical Committee
ToO	Target-of-Opportunity
VLT	Very Large Telescope
4MOST	4-metre Multi-Object Spectroscopic Telescope

2. Related Documents

The following documents, of the exact version shown, form part of this document to the extent specified herein. In the event of conflict between the documents referenced herein and the content of this document, the content of this document shall be considered as superseding.

AD references shall be specific about which part of the target document is the subject of the reference.

2.1 Applicable Documents

The following documents, of the exact version shown, form part of this document to the extent specified herein. In the event of conflict between the documents referenced herein and the content of this document, the content of this document shall be considered as superseding.

AD1 VLT/VLTI Science Operations Policy, ESO/STC-361, June 2004
ESO-361183 Version 1
https://pdm.eso.org/kronodoc/HQ/ESO-361183/1

AD2 Memorandum of Understanding for the SOXS Instrument on the NTT Telescope
No. 11378/LET/CP/AMA
ESO-323384, Version 2
https://pdm.eso.org/kronodoc/HQ/ESO-323384/2

2.2 Reference Documents

N/A

3. Document Contents

3.1 Introduction

SOXS - the Son of X-Shooter - is a medium resolution spectrograph operating at visible and near-infrared wavelengths, installed at ESO's NTT on La Silla. As for other ESO instruments, the Consortium that has invested funds and human resources into building and operating the instrument is rewarded by the granting of substantial amount of Guaranteed Time Observations (GTO), in this case 900 nights over 5 years AD2.

ESO monitors the full proposal selection process and provides the data archive. While ESO is also supervising the overall operations and providing telescope operators, it is not involved in the daily operations in case of SOXS. Therefore, like some other new instruments at ESO (NIRPS, 4MOST), SOXS is nearly completely operated by the Consortium that built the instrument. While ESO is not involved in the daily operations of SOXS, ESO will inspect the operations metrics of SOXS after each observing period. ESO will perform a light-touch review after one year and a further review of the full process after the first two years of operations (and regularly after that), once the instrument and operation processes are stabilised, and re-evaluate the policies. The evaluation criteria will include access of the non-GTO community to the instrument, ToO distribution, and time to target. The policy may be updated based on the evaluation. The SOXS Consortium together with ESO will assess the status of the La Silla infrastructure, the NTT, and the overall operations at regular intervals.

One of SOXS' strong science cases is the observation of transient objects, and as such, a significant fraction of its operations is expected to be in a Target-of-Opportunity (ToO) mode. Targets that are unknown at the time of the proposal submission but can be observed more than 7 days after they have been identified can be observed as part of normal (non-ToO) runs. The nature of the transient targets puts constraints that guide this policy, since observations missed at a certain time often cannot be recovered later. Therefore, the main guiding principle for these policies is to maximise science outcomes by ensuring that targets are observed without the need to make any prior decisions. The following policies relate to both GTO and non-GTO proposals, unless explicitly stated otherwise.

3.2 GTO proposals

GTO proposals (generic target description, trigger criteria) are submitted through normal ESO calls and reviewed by the OPC. The protected object categories are made public ahead of the call for proposals for open time. The SOXS Consortium data will be public after a one-year proprietary period, as normal ESO data.

3.3 Target-of-Opportunity

ToOs can be triggered by any PI (or their delegate) initially by 12:00 CET/CEST for the upcoming night. In case of conflict between triggers for the same object, a trigger from an

active GTO programme has priority over any non-GTO trigger. Community proposals will be allowed to request an overlap of science cases with GTO, with the understanding that they would not observe if GTO triggers. Once the SOXS Consortium declares a source to be a GTO target, they are entitled to exclusively follow-up on SOXS observations until the SOXS Consortium declares the observational campaign is terminated. The SOXS Consortium will publicly and dynamically indicate the completion rate (in terms of hours of observations) of each object categories so that community PIs can trigger when the chance of observing are significant. Should there be a conflict between non-GTO triggers, a first-come, first-served priority is applied, and the first-in team gets exclusive access (among non-GTO targets) for the follow-up of that target. Any classified object that is in line with a GTO proposal can be claimed by the SOXS Consortium for monitoring with SOXS up to their time allocation. This target could be monitored by non-GTO teams with other ESO instruments.

3.4 Hard-ToO and Soft-ToO

Hard-ToO and Soft-ToO (with reaction times of up to 48 hours and up to 7 days after the trigger, respectively, as defined in ESO ToO policies) are available to all users of SOXS. Within the first 5 years of operations, a mode equivalent to RRM (rapid response mode) is initially available only to the SOXS Consortium because of the inherent difficulties for the Consortium to commit to a reliable process for the community. Community observations interrupted by an RRM from the Consortium will be automatically re-executed within 48 hours, unless instructed otherwise by the PI.

3.5 Nightly schedule

The nightly schedule is defined before the start of the observing night. The Consortium assesses which ToO (community or Consortium) should be observed within the allocated times, technical feasibility, conditions, and in compliance with the trigger approved by the OPC. ToO (community or Consortium) observations get priority over normal (non-ToO) runs until the allocation time has been reached. PIs of ToO observations will be informed by the Consortium that their triggers might be observed in the upcoming night when the schedule is ready. Community ToOs already scheduled within the afternoon deadline shall not be overruled by a Consortium RRM trigger at a rate higher than 1 per night. Given the observing mode, there will be no compensation for weather, technical or operational losses.

3.6 Dissemination of source classification

In case of classification runs as described in the original proposal (GTO and non-GTO), the proposers are required to follow good scientific practice and announce the classification of the source as soon as possible after it was observed using appropriate channels such as the Transient Name Server, General Coordinates Network or other public channels. Classification spectra acquired will be made public within 3 days of observations if not covered by an active proposal. Furthermore, data presented in papers published in international journals must be made public by the authors at the time of publication in the journal.

3.7 Observing queue

Because of its special focus on transient science, which often requires fast reactions, SOXS is initially foreseen to be operated exclusively through the SOXS scheduler software. The tools provided by the SOXS Consortium to carry out the observations are similar, but not identical, to ESO's service mode. The Proposal and Observing Block (OB) preparation tools P1 and P2 will be available with instrumental technical advice and support from the Consortium.

3.8 Resolution of disputes

Notwithstanding the dispute resolution mechanism defined in the MoU between the SOXS consortium and ESO, in case of disputes related to the implementation of the policies described in this document, a resolution shall first be sought through discussion between the different parties (SOXS PI and community user representatives) with designate of the ESO DG as mediator. Should no negotiated solution be possible, the final decision rests with the ESO Director General as for all time allocation on ESO telescopes.

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