

SNEWS Operational Mode Template Description

SNEWS Collaboration

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1 Introduction

The purpose of this document is to specify a template for operational mode documents of the SuperNova Early Warning System (SNEWS).

It is the conviction of the participants that SNEWS should operate under conditions that are:

- Documented and available at all times to the participants.
- Approved by the participants.
- Consistent with the “Prompt”, “Positive” and “Private” objectives of SNEWS.

It is also implicit that SNEWS will develop in a series of managed transitions between operational modes. For instance, new experiments or new coincidence servers will be added or removed. Each operational mode will be identified by a number and the date when it came into effect, and will specify in detail the participants, the coincidence conditions, the alert classifications, and the procedures for action in case of different alarm conditions. Major changes (*e.g.* addition of an experiment) will increment the first version number, and minor changes (*e.g.* change in some monitoring responsibility) will increment the second number of the operation mode version. This document outlines a template for an operational mode document.

One caveat is that any details that would assist individuals in locating and gaining access to the SNEWS servers, and information that could be used to simulate SNEWS alerts, will be confined to an appendix which will not be widely distributed but is nonetheless available to SNEWS subgroup members.

2 Operational Mode Template

Section 1: Participating Experiments

This section will list all experiments that may send alerts to the coincidence server(s). It is understood that a temporary lack of participation of one or

more of these listed experiments for hours, days, or weeks does not constitute a change of operational mode. Any other change in this list does constitute a change of operational mode. However the SNEWS collaboration should be notified of long lasting downtime periods ($\delta t > 1$ day), previously scheduled for maintenance, calibration or other items. The information will be posted into the downtime web page, available to experiment collaboration members.

Section 2: Privacy Agreement

This section will contain a pointer to the current SNEWS privacy agreement, which defines guidelines for communication of SNEWS-related information.

Section 3: Client Computer Management

Client computer management at each local site is the responsibility of each participant experiment. No specific requirements are formally imposed on the collaboration members, other than those described in the privacy agreement. Basic recommendations will however suggested in this section, to improve the security of the whole system, since the information passed via socket connection to the SNEWS server(s) is present on the local machines.

Section 4: Server Computer Management

The SNEWS server are managed according to memoranda of understanding with national laboratory or similar sites; this section will list the currently active coincidence servers and provide pointers to the currently active memoranda of understanding. A significant MOU change, or permanent addition or removal of a coincidence server from the network, constitutes a change of operational mode.

Section 5: Client-Server Communications

This section will define individual experiment alarm categories (*e.g.* TEST, DUBIOUS, GOOD) and packet flags, and will describe the communications protocol between client and server (encryption protocol, access check requirements, etc).

Section 6: SNEWS Shift Work

The SNEWS subgroup members will share SNEWS shift work on a regular basis. Each SNEWS member will be equipped with communications equipment, and is responsible 24/7 for response to SNEWS coincidences (silver or gold), as well as some regular maintenance and monitoring jobs. This section will outline the shifting mode and designate the shiftmeister, and will list specific responsibilities of the SNEWS shifter. This information will be provided in a short and simple manual, including daily duties, alert procedures and actions, e-mail and phone numbers of all subgroup members, SNEWS coordinator, and server sysadmin(s).

Section 7: Coincidence Definition

This section will define the coincidence conditions for different SNEWS alert categories (*e.g.* TEST, SILVER, GOLD).

Section 8: Alert Procedure

This section will describe in detail the procedure to be followed by SNEWS members and individual experiments for the case of each type of coincidence alert. It will specify what information is to be sent as part of an alert, and to whom. After receipt of this information, if the information is used either for any scientific purpose or for any alert communication, the SNEWS origin of the information should be always clearly cited.

For each alert type, each experimental collaboration provides a list of e-mails, names and phone numbers, and fixes the specific notification order and procedure. For instance, an email may be sent to a particular list, and furthermore a certain set of people may be notified in a given order by the SNEWS shifter. This detailed contact information will be included in the appendix.

Section 9: Communication to the Scientific Community

This section will describe the means of communication of the alert information to the astronomical community, including examples of the alert emails to be sent. This section will also include a description of the alert list management and details of PGP verification of the emails.

Section 10: Changelog

This section will summarize the main changes since the previous document version.

2.1 Appendix

The appendix will contain any information which needs to be defined for the operating mode, but which should be available only to the SNEWS subgroup, such as the SNEWS datagram packet definition.