Signal Processing

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Incoming Signals are taken into the stages™ application from a Receiver via a stages™ Connect box. The raw message of the Signal is interpreted by the Receiver Task, and parsed to an Xmit# (constructed from the Receiver#, Line#, and Panel Account#), a Signal Code, and a Point#. The Xmit# links the Signal to an Account. The Signal Code links the Signal to a default Event Code, and the Point# links the Signal to Device Configuration.

Xmit#

The Transmission Number is formatted from the Raw Message by a Receiver Task.

If the Xmit# exists within the database, the Signal Code and Point of the Raw Message will be posted into the Event History of matching Site. If the Xmit# does not match an existing account, it will log the event to the UNKNOWN account. stages™ can be configured to create an Account when a unmatched Xmit# is received. This is done by entering an 'Auto Create Xmit Site Name' in the stages® Options utility. This will log the event to a new 'shell' site rather than lumping all the signals in the UNKNOWN account.

Signal Code

The code sent by the panel. For example SIA codes of BA, BT, BR, FA, FT, FR….

Signal Codes are configured from the Signal Formats window (Utilities | Processing | Signal Formats) by clicking on a Signal Format.

The Signal Code information has been programmed by SGS to interpret the message. Signal Codes are applied a Signal Status that can consist of the following:

- A - Alarm
- B - Bypass
- C - Close/Arm
- I - Equipment Info
- O - Open/Disarm
- R - Restore
- T - Trouble
- TA - Tamper Alarm
- U - Unbypass

The Signal Code is applied a Default Event Code based on the Signal Status, such as SGSA for Unknown Alarm and SGST for Unknown Trouble. The Default Event Code can be overridden by the stages™ User to point to any Event Code. For instance, the SIA Signal Code 'BA' can link to an Event Code specific to the Signal Code like 'BA' or to a more generic Event Code like 'Burglary'.

The Event Code determines whether or not the Signal is informational (log only) or an Alarm (sent to a Dispatch Queue).

Point

Point typically represents a sensor connected to the alarm panel. The point is often represented as a numeric value. Points are sometimes referred to as zones. Points are setup in Device Configuration. The Device Configuration can link the point to an Event Code that will override the Event Code set up in the Signal Format table.

Device Configuration can be set up on Site Data Entry, Site Group, and Device Type setup. When applying Event Codes to the Signal, this Hierarchy is used:

1. Site Device Configuration
2. Site Group, Device Tpye, and Site Type* Configuation
3. Site Group and Device Type* Configuration
4. Site Group and Site Type* Configuration
5. Site Group* Configuration
6. Device Type Configuration
7. Signal Code Default Event Code

When a Site has multiple Site Groups, the Site Group Type Rule Order field is used to determine the relative order of the Site Groups.

When a signal comes in, stages™ first looks at the Site Device Configuration for an event code applied to the point generating the signal. It goes down the list until it finds an event code to apply. If no event code is applied, it will result in the generic “unknown” event code linked to the signal status. Signal Code Default Event Codes should be applied to all signals codes with the higher levels of signal processing used for exceptions.

The Point configuration can be setup to override the Event Code parameters, such as Alarm or Informational, Priority, and Delay. The point can also be configured to act as a 'Separate Alarm' to be dispatched separately from other signals received for the same Xmit#.

Alarm Confirmation and Abort

A signal can require a confirmation signal before an alarm is generated. Alarm Confirmations (Setup | Alarm Processing | Alarm Confirmation) are given a Signal Confirmation Period and applied to Device Configuration points. One tripped point assigned to an alarm confirmation will not generate an alarm, but two tripped points within the signal confirmation period will.

A signal can belong to an Abort Group that will cancel an alarm. Abort Groups (Setup | Alarm Processing | Abort Group) are given an Abort Option of either 'standard' (clears an alarm), or 'abort during delay period' (prevents an alarm from being generated). Abort Groups are applied to Event Codes. Multiple event codes can belong to the same Abort Group. Event Codes that abort the events belonging to a group are assigned to the group and marked as the Abort event. Based on a stages® Option, once an account has been locked to an operator, the event cannot be aborted.

Signal Processing Task

Signal Processing is a Task (typically Task#11) and is checked by the Lates Program. In the event Signal Processing is behind, there will be a visual indication on the Task Status window (Utilities > Processing > Task Status) and an alarm will be generated on the Signal Processing Task Site.

Signal Processing Errors

stages will log an Event Code when Signal Processing is unable to match the incoming signal code. The following will log to the matching Xmit# (if match exists):

- '!001' - Undefined Signal Code - when the signal code is not found in the Signal Formats table.
- '!002' - Unsupported Format - when the incoming raw message is not recognized.
- '!003' - Undefined Signal - when the incoming signal code is in the Signal Formats table but there is no Event Code defined.
- '!004' - Invalid Event Code - when the Event Code matching the incoming signal code is not defined in the Event Code setup.