



Release notes

7 March 2019

Version History/Revision History

Date	Version	Description
22 March 2016	Blockly4SoS 1.0	First Release
5 March 2019	Blockly4SoS 1.1	Update with automatic Template Analysis generation. Removed information related to completeness of the requirements coverage.

NEW IN THIS RELEASE

In the facility tool web page has been added:

1. Open Keyword file form
2. Generate Analysis button

The main feature added in Blockly4SoS version 1.1 is the automatic generation of an Analysis Template.

The Analysis Template is an excel file (namely Template_Analysis_[date].xls) that supports Hazard or Threat Analysis based on HAZOP approach created from a (.txt) Keyword file.

After creating a Blockly model, an user can choose a Keyword file and generate the Analysis Template clicking on the Generate Analysis button on the right side of the facility tool web page. (If the user does not choose a Keyword file, a default Keyword file will be used).

The Analysis Template excel file consists of two sheets organized in the following way:

- “Functional” sheet that contains the following columns:
 - Analysis ID: contains the unique identifier number of a system functionality (generally related to a “Service” block in the model)
 - Block: contains the name of “CS” or “Prime Mover” blocks defined in the model
 - Function description: contains the name of “Service” blocks defined in the model
 - Keyword: contains the keywords defined in the Keyword file (see Section Assumption of use for details)
 - High level description of the scenario to be analyzed: contains the description of the unexpected behavior of the functions

- Causes, Consequences (Local Level), Consequences (System Level), Severity (Pre-Mitigation), Probability/Frequency (Pre-Mitigation), Risk (Pre-Mitigation), Mitigation, Severity (Post-Mitigation), Probability/Frequency (Post-Mitigation), Risk (Post-Mitigation), Status, Note are empty columns that the user has to fill for risk assessment.
- “Interfaces” sheet that contains the following columns:
 - Analysis ID: contains the unique identifier number of a system interface (generally related to a RUMI/RUPI block in the model)
 - Message_name: contains the name of “Message” blocks defined in the model
 - Source_block: contains the name of “CS” or “Prime mover” blocks defined in the model considered as source blocks that send a “Message/Thing” to a destination block connected by “RUMI/RUPI”
 - Destination_block: contains the name of “CS” or “Prime mover” blocks defined in the model considered as destination blocks that receive a “Message/Thing” from a source block connected by “RUMI/RUPI”
 - Keyword: contains the keywords defined in the Keyword file (see Section Assumption of use for details)
 - High level description of the scenario to be analyzed: contains the description of the unexpected behavior of the interfaces
 - Causes, Consequences (Local Level), Consequences (System Level), Severity (Pre-Mitigation), Probability/Frequency (Pre-Mitigation), Risk (Pre-Mitigation), Mitigation, Severity (Post-Mitigation), Probability/Frequency (Post-Mitigation), Risk (Post-Mitigation), Status, Note are empty columns that the user has to fill for risk assessment.

Assumptions of use

The automatic generation of Analysis Template works properly under the following assumptions.

1. The Blockly model must not be grouped (i.e. the model must not be created using the “Groups” blocks)
2. The name of the blocks in the Blockly model must not contain blanks
3. The “RUMI/RUPI” blocks in the Blockly model should contain at least one “Message/Thing” block (otherwise the interface is not reported in the “Interfaces” sheet)
4. The “CS” blocks in the Blockly model should contain at least one “Service” block (otherwise the CS is not reported in the “Functional” sheet)

The Keyword file must be a .txt file and formatted as in the following example:

```

F;Not;The function "function_name" does "keyword" execute when it should.
F;Other than;The function "function_name" executes "keyword" with respect to what is expected.
F;Keyword
.
.
I;Not;"destination_name_block" does "keyword" receive "message_name".
I;Corrupted;"destination_name_block" receives "keyword" "message_name".

```

Table 1 – Example of Keyword.txt file formatting.

Where F indicates that the row is used to generate the “Functional” sheet, and I indicates that the row will be used to generate the “Interface” sheet in Analysis Template file.