ETAS MODEL-SIMULATOR V3.1

Command Line Interface

User Guide

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MODEL-SIMULATOR V3.1 I User Guide R03 EN I 08.2024

Content

1 Introduction

In this chapter, you can find information about the intended use, the addressed target group, and information about safety and privacy related topics.

1.1 Intended Use

ETAS Cloud-Services is a cloud-based platform intended for virtualization purposes by providing a toolchain for continuous integration, test, and validation of software in automotive electrical/electronic (e/e) systems.

With ETAS MODEL-SIMULATOR, it is possible to run simulations or automated test executions in the cloud in order to significantly speed up this process in particular for large simulation and test tasks. As a result, simulation or test execution results can be downloaded. The results of the simulation depend on the quality of the plant models and software models as well as on the choice of suitable excitation signals (input stimuli), quality and representativeness of test procedures for the intended development task. The results should therefore be checked for suitability for subsequent investigations by the user.

ETAS Cloud-Services runs in a native cloud environment and is offered as a service (SaaS). ETAS GmbH cannot be made liable for damage which is caused by incorrect use and not adhering to the safety information

ETAS MODEL-SIMULATOR CLI allows you to run the test executions in the cloud. The CLI can be installed on the local PC or can be integrated into automation scripts. Currently only Windows is supported.

1.2 Target Group

This product is directed at trained qualified personnel in the simulation and calibration sector of powertrain ECUs (e.g. calibration engineer, function developer or simulation model developer). Technical knowledge in simulation of vehicle systems and control unit engineering as well as pre-calibration or calibration of those is a prerequisite.

1.3 Data Protection

If the product contains functions that process personal data, legal requirements of data protection and data privacy laws shall be complied with by the customer. As the data controller, the customer usually designs subsequent processing. Therefore, he must check if the protective measures are sufficient.

1.4 Data and Information Security

To securely handle data in the context of this product, see the next sections about data and storage locations as well as technical and organizational measures.

1.4.1 Data and Storage Locations

The following sections give information about data and their respective storage locations for various use cases.

1.4.1.1 License Management

When using the ETAS License Manager in combination with user-based licenses that are managed on the FNP license server within the customer's network, the following data are stored for license management purposes:

Data

- Communication data: IP address
- User data: Windows user ID

Storage location

- FNP license server log files on the customer network

When using the ETAS License Manager in combination with host-based licenses that are provided as FNE machine-based licenses, the following data are stored for license management purposes:

Data

- Activation data: Activation ID
  - Used only for license activation, but not continuously during license usage

Storage location

- FNE trusted storage

  `C:\ProgramData\ETAS\FlexNet\fne\license\ts`

1.4.2 Technical and Organizational Measures

We recommend that your IT department takes appropriate technical and organizational measures, such as classic theft protection and access protection to hardware and software.

1.5 Safety Advice

Every user is obliged to read the safety advice document before using the MODEL-SIMULATOR CLI and also provide the consent as read and accepted.

Every command (except help command and version command) of the MODEL-SIMULATOR CLI provides the contents of safety advice as output. You have to read the safety advice and provide consent to proceed further with the execution.

2 About MODEL-SIMULATOR Command Line Interface (CLI)

MODEL-SIMULATOR CLI allows you to run the test executions in the cloud. The MODEL-SIMULATOR CLI can be installed on the local PC or can be integrated into automation scripts.

- Only Windows is supported.
- It supports execution of tests using ECU-TEST as 3rd party tool and a set of supported simulators.
- Triggered test execution cannot be stopped.
- If you want to use a new campaign, you must specify a new name. Otherwise, already uploaded data with the same name will be reused.

> **Note**
>
> MODEL-SIMULATOR V3.1 is released with the CLI client V2.1.0.

2.1 MODEL-SIMULATOR CLI Release

The MODEL-SIMULATOR CLI is provided as a ZIP file with the following folders:

- **Documentation**: Holds all required documents.
  - **OSS Attributions**: Contains a list of open source software (OSS) components used within the product under the terms of the respective licenses. The source code corresponding to the open source components is also provided along with the product wherever mandated by the respective OSS license.
- **MODEL-SIMULATOR-<version>**: Holds the executable MODEL-SIMULATOR CLI file.
- **Templates**: Holds the reference template files.

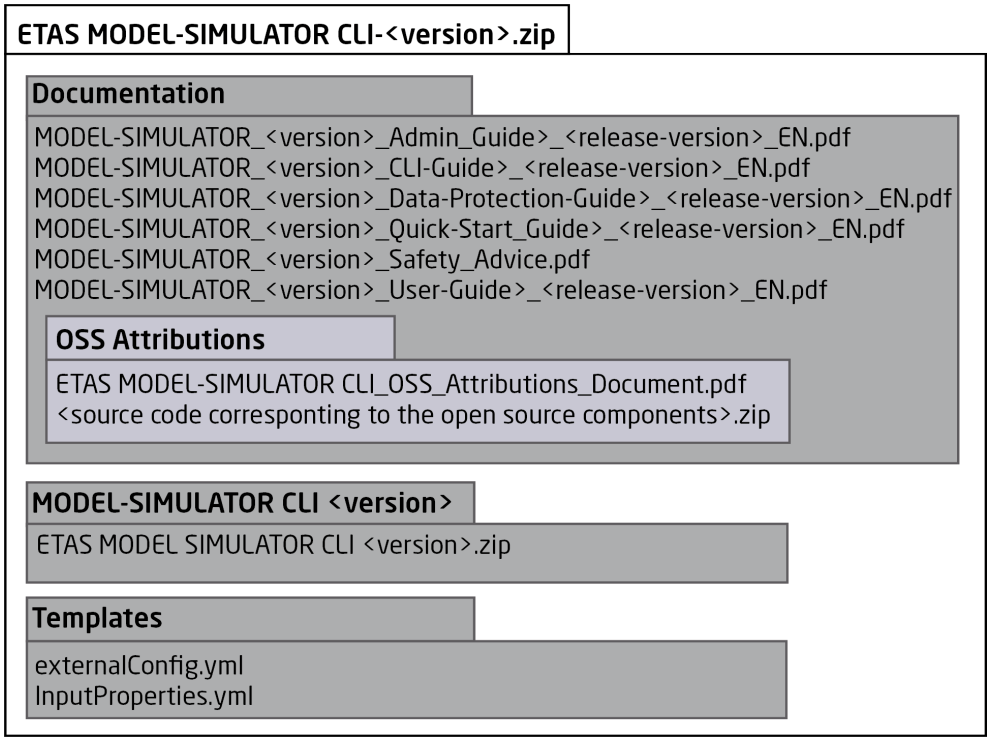


Fig. 2-1: MODEL-SIMULATOR CLI folder structure

- **‹version›**: Describes the current MODEL-SIMULATOR or MODEL-SIMULATOR CLI version.
- **‹release_version›**: Describes the release version of a document.

2.2 Supported Use Case

MODEL-SIMULATOR supports toolchains with specific version combination. To get an overview of the toolchains and their versions and the supported tool combinations and versions, see "Toolchain and Tool Versions" below.

Test Execution

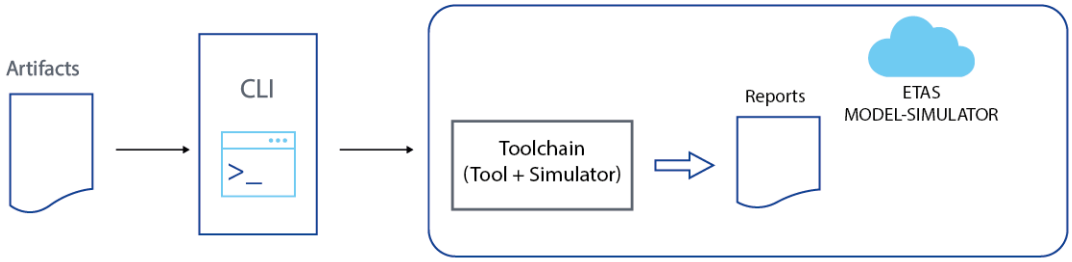


Fig. 2-2: General structure of Use Case

2.3 Use Case Overview

You can use the MODEL-SIMULATOR CLI to perform the following actions related to test execution:

- Run test
- Get status
- Download result

2.4 Toolchain and Tool Versions

ECU-TEST is a software for testing and validation of embedded systems. MODEL-SIMULATOR accepts ECU-TEST workspaces which comprises of the test suite and the integrated System-Under-Test such as a Functional Mock-up Units (FMUs).

FMPy is an inbuilt library in ECU-TEST used to simulate the FMUs. In addition, VLAB virtual hardware models can also be used for simulation within the ECU-TEST workspace.

MODEL-SIMULATOR also supports the usage of MOBI (Modular Bus Interface) tool in the cloud. With this, the project specific SPI communication can be translated into readable instructions.

Toolchain	Supported Tool Versions		Required Artifacts
	Version	Tool	
ECUTEST + COSYM	ECUTEST COSYM	2023.2.3 3.4	Campaign, vehicle
	ECUTEST COSYM	2024.2.3 3.4.1	
ECUTEST + MOBI	ECUTEST MOBI	2023.2.3 5.0.1	Campaign
	ECUTEST MOBI	2024.2.3 5.0.1	
ECUTEST + VLAB_BUNDLE + MOBI	ECUTEST VLAB_BUNDLE (see VLAB Bundle for 2.0) MOBI	2023.2.3 2.0 5.0.1	Campaign
	ECUTEST VLAB_BUNDLE (see VLAB Bundle for 2.0) MOBI	2024.2.3 2.0 5.0.1	
	ECUTEST VLAB_BUNDLE (see VLAB Bundle for 3.0) MOBI	2024.2.3 3.0 5.0.1	

2.4.1 VLAB Bundle Versions

A VLAB bundle is a combination of a specific version of the VLAB tool and tool boxes.

2.4.1.1 VLAB Bundle for 2.0

The following table shows the components of VLAB_BUNDLE 2.0.

VLAB	2.8.5
can-2.5.0-win-vc140-x64.vlabtoolbox	2.5.0
rh850-3.4.4-win-vc140-x64.vlabtoolbox	3.4.4
rh850-icum-3.4.1-win-vc140-x64.vlabtoolbox	3.4.1
rh850g4-icum-126.0-win 140-x64.vlabtoolbox	1.26.0
rh850g4-1.26.0-win-vc140-x64.vlabtoolbox	1.26.0
ASAM XiL	2.1.0
Custom Tool Adapter	1.0

2.4.1.2 VLAB Bundle for 3.0

The following table shows the components of VLAB_BUNDLE 3.0.

VLAB	2.9.3
can-3.0.0-win-vc142-x64.vlabtoolbox	3.0.0
rh850g4-icum-2.0.0-win-vc142-x64.vlabtoolbox	2.2.0
rh850g4-2.2.0-win-vc142-x64.vlabtoolbox	2.2.0
ASAM XiL	2.1.0
Custom Tool Adapter	1.0

2.5 MODEL-SIMULATOR CLI Setup

To get more information about MODEL-SIMULATOR CLI Setup, see "Setting up the MODEL-SIMULATOR CLI on a Local Machine" on page 16.

2.6 MODEL-SIMULATOR CLI Command Reference

To get more information about MODEL-SIMULATOR CLI Command Reference, see "MODEL-SIMULATOR Command Line Reference" on page 21.

2.7 MODEL-SIMULATOR CLI Infrastructure Setup

- ETAS MODEL-SIMULATOR Service Desk must create a technical user. You can contact ETAS MODEL-SIMULATOR Service Desk using this link.
- Once the environment is available, you need to update the `externalConfig.yml` with the environment access data provided byETAS MODEL-SIMULATOR Service Desk
  (You can find the template at `ETAS MODEL-SIMULATOR CLI <version> > Templates > externalConfig.yml`).

2.8 ECU-TEST Specifications (Workspace)

The ECU test tool supports external dependencies provided as part of workspaces. An ECU test workspace that make use of a library feature can be uploaded via campaign services.

The use of the library feature is optional and both (with library feature and without library feature) campaign structures are supported.

For the test execution campaign a dedicated data structure has to be fulfilled for a successful upload.

> **Note**
>
> All the artifacts required to run the test cases must be packaged inside the workspace. The test bench configuration (.tbc) and test configuration (.tcf) files must contain only the relative paths to any artifacts they refer to within the workspace. If absolute paths are provided the test case execution in the cloud will fail.

Campaigns Without Use of Library Feature

The ECU test data has to be zipped (without Report folder) and uploaded for the test execution use case. At least the ZIP file must contain the packages, configurations and workspace folder of the ECU test project for campaigns without libraries.

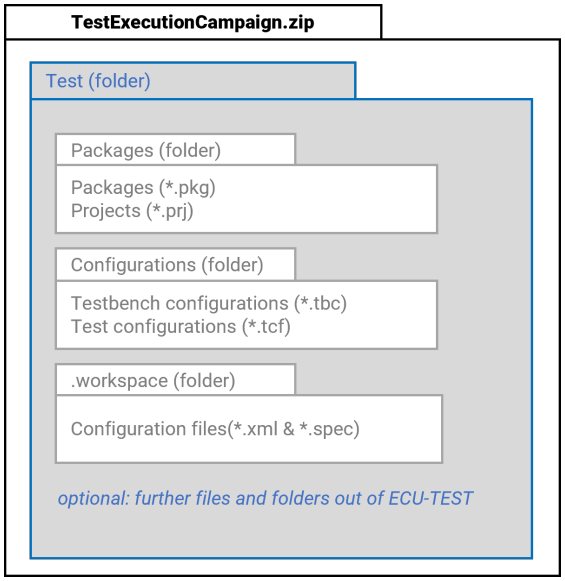


Fig. 2-3: Test execution campaign ZIP file composition (required structure) for campaigns without libraries

Campaigns With Use of Library Feature

For campaigns with libraries the following ZIP file composition has to be considered. ECU test data has to be zipped (without Report folder) and uploaded for the test execution use case. At least the ZIP file must contain a root folder, one or more library workspaces, a project folder with the packages, configurations and workspace folder of the . ECU test project for campaigns with libraries.

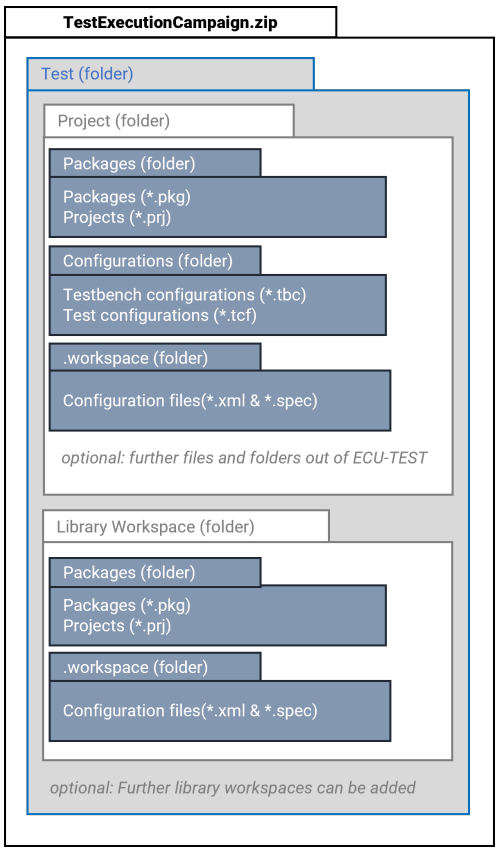


Fig. 2-4: Test execution campaign ZIP file composition (required structure) for campaigns with libraries

3 Setting up the MODEL-SIMULATOR CLI on a Local Machine

3.1 Prerequisites

3.1.1 General

- Java (JDK 17) is installed on your PC.

  If Java (JDK 17) is not installed, go to Java installation and download OpenJDK17. You can check the Java version on your system by executing "`java --version`" in the command prompt.
- Proxy configurations are set correctly.

Import of Bosch Root CA Certificate

Execute the following command to import the certificate as trusted root CA certificate:

Adding to default Java Keystore

```
#!/bin/bash
keytool -import -trustcacerts -cacerts -storepass changeit -
alias Bosch-CA-DE -file/C/Temp/BOSCHCA-DE_bin.cer
```

Adding to non-default Java Keystore

> **Note**
>
> If you want to add the certificate to a Java Keystore that is not the system's default, you need to execute the command from the `lib /security folder` of the Java installation. Mind the difference.

```
#!/bin/bash
./keytool.exe -import -trustcacerts -keystore cacerts -store-
pass changeit -alias Bosch-CA-DE -file
/C/Temp/BOSCH-CA-DE_bin.cer
```

3.1.2 Setting up ANSI Colors for Windows Shells

To display the color highlights in the command prompt

1. Download the ZIP file from here and extract it to a permanent location.
2. Execute "`ansicon.exe -i`" from the appropriate directory for your system (x86/x64).
3. Alternatively, place the ansicon executable in your PATH or add its location to your PATH in the system variables.

3.1.3 Setting up the Environment Properties for the CLI

To set up the environment properties for the CLI

1. Create a folder named "`.ecs`" under the user.home directory
2. Copy the `externalConfig.yml` file from the `Templates` folder of the CLI delivery into the created folder.
3. Enter the values of the properties mentioned in the YAML file that are required for using the MODEL-SIMULATOR CLI. Contact ETAS MODEL-SIMULATOR Service Desk for any help regarding the values to be filled using this link.

3.1.4 Access

3.1.4.1 CLI Authentification

Request a technical user from ETAS MODEL-SIMULATOR Service Desk for authentication when executing commands using this link.

ETAS Cloud-Services MODEL-SIMULATOR

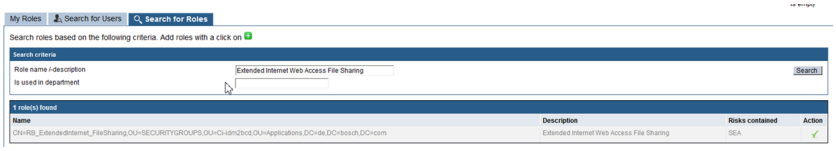
Request access from ETAS MODEL-SIMULATOR Service Desk for ETAS Cloud-Services using this link. Specify a user name, user email ID, and a reason.

Extended File Sharing (for Bosch Associates)

To get the extended file sharing access to upload and download files

1. Go to the **IdM page**.
2. Go to the **User Self Service** tab.
3. Select **Internet Web Access** from the table.
4. Go to the **Search for Roles** tab on the right.
5. Search for **Extended Internet Web Access File Sharing**.
6. Click the **+ button** in the **Action** column and add the role to the cart.

➪ The **+ button** in the **Action** column becomes a check mark.



8. Click on the **shopping cart button** on top right of the page
9. Provide a reason and click **Submit**.

➪ The request is submitted to the manager. Once the manager approves, you will get file sharing privileges.

Recommendation for the approving manager:
https://inside-docupedia.bosch.com/confluence/display/ciafsperimetersec

3.1.4.2 Running the CLI on the Local Machine

To run the CLI on the local machine:

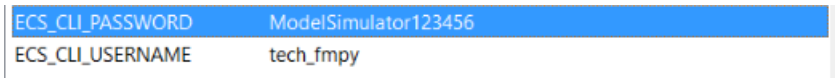
1. Download the `MODEL-SIMULATOR CLI-<version>.zip` file from the release location to a permanent location on your local machine.
2. Unzip the `MODEL-SIMULATOR CLI-<version>.zip`.
3. Open a new command prompt .
4. Execute the following command to set the Java and CLI path:

   `"set path=<local_path>\jdk-version\bin;<local_path>\<-folder_name_of_extracted_cli_zip>\bin"`

3.1.4.3 Authenticating in the CLI

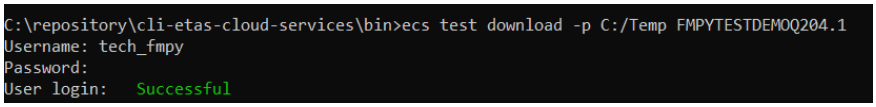
To authenticate in the CLI you have the following two options:

- **Environmental Variables:** Configure the user credentials (technical user credentials) as environment variables (as shown below) so that they are not requested during command execution.



> **Note**
>
> This configuration is not recommended for local setup.

- **Command prompt:** Specify the technical user credentials when you run the command. The prompt asks for the user credentials if they are not provided by environmental variables. The prompt will look like the following:



In exchange for these credentials, the CLI receives a refresh token from authenticator service, which is cached. It uses this cached data for further command executions until it expires. After expiration or the cached authentication credentials are inappropriate for the provided environment, you get asked to re-enter the credentials. In most cases this happens due to environment configuration values that were changed after caching the authentication credentials of the previously configured environment.

3.1.4.4 Verifying the Upload and Download of Artifacts

To verify the upload and download of artifacts

1. Log in to the **GUI** if it is enabled for the environment.
2. The campaign with the given name must be listed there.
3. The test execution project overview must list the project with the given name and the appended sequence number.

4 MODEL-SIMULATOR Command Line Reference

MODEL-SIMULATOR CLI supports the test execution workflow using the supported tool combinations and specific version combinations. For more information see"Supported Use Case" on page 10 and "Toolchain and Tool Versions" on page 10.

The following list provides the available commands and features in the MODEL-SIMULATOR CLI.

Commands:

Additional Features

4.1 Commands

4.1.1 Error handling

The error handling mechanism in the MODEL-SIMULATOR CLI is designed to handle an erroneous situation by prompting the user with a clear error message that has the following parts.

1. Which action requested by the user has failed.
2. Conveying the user the probable reason of why the error occurred.
3. What action should be taken to overcome the error.

The error handling mechanism detects and informs the user of any missing inputs that need to be provided in the configuration yaml files. Further, any errors with respect to command execution or issues with respect to the cloud infrastructure will also be conveyed to the user.

The error message will be displayed along with a suitable error code on the command prompt and logged in the corresponding logs as well. The user can utilize the error code to reach out to the Operations team for further assistance. Additionally, the exit code for errors will be provided as 2 and for successful executions it will be provided as 0.

4.1.2 General Explanations

Syntax

The general syntax uses the following expressions:

- **ecs**: Name of the tool
- **test**: Test execution workflow

Release Version

If the current released MODEL-SIMULATOR CLI is a pre-release version, each output of the command is preceded with the text "`Prerelease version of ETAS MODEL-SIMULATOR CLI.`"

InputProperites.yaml

`InputProperties.yaml` is the default yaml file and delivered to you. As a reason it is used as default for `Input file path`. You can use any other file, provided that it must be a yaml file.

4.1.3 General Conventions for Uploaded Data

Following conventions have to be fulfilled for all uploaded data in MODEL-SIMULATOR CLI:

- Maximum characters: 1024
- Can only start with any
  - lower case characters
  - upper case characters
  - numbers
  - special characters: _ .
- Can contain any
  - lower case characters
  - upper case characters
  - special characters like: ! - _ . ( )
- Not allowed:
  - other special characters like: '
  - white spaces

4.1.4 Help

4.1.4.1 Description

Prints the help text. It is available for each command.

4.1.4.2 Syntax

It is possible, to use the help command as it self.

help command
`ecs --help` `ecs -h`

It is also possible to use the help command to get help regarding a command or a sub-command.

with command
`ecs <command> -h` `ecs <command> <subcommand> -h`

4.1.5 Version

4.1.5.1 Description

Prints the version of the MODEL-SIMULATOR CLI.

4.1.5.2 Syntax

```
ecs --version
ecs -V
```

4.1.6 Test Run

4.1.6.1 Description

Triggers the test execution for the given input configuration.

4.1.6.2 Syntax

```
ecs test run [ --nowait ] [Input file path]
```

- **run:** run/execute the tests

4.1.6.3 Options

Name	Required	Description
--nowait, -nw	No	Starts the test execution and returns the control (do not wait for execution to complete). This is a flag.
--wait	No	Starts the test execution and returns the control (waits for execution to complete). This is a flag.
Input file path	Yes	The input YAML file path. Both `*.yaml` and `*.yml` extensions are supported.

4.1.6.4 Examples

- `ecs test run -nw C:/CLI/InputProperties.yml`
- `ecs test run --nowait C:/CLI/InputProperties.yml`
- `ecs test run <c:/temp/InputProperties.yml>`

4.1.6.5 Behavior of Run Command

wait-mode

In this mode, the test execution is triggered and waits until the test execution is completed. Post completion, the results are downloaded if available and then the command execution is completed.. For this mode, the download path must be compulsorily present in `inputproperties.yaml`.

> **Note**
>
> The download of the results is possible even for a test execution group that has a mixture of completed and failed runs. When a download is triggered on such a test execution group, the partial results are downloaded.

no wait mode

In this mode, the test execution is triggered and command execution gets completed. Basically the command does not wait for the test execution to complete and in case any results need to be downloaded later, a separate command needs to be triggered.

4.1.6.6 Input YAML File Details

The file has three sections:

- inputProperties
- outputProperties
- cliConfig

inputProperties

Contains the attributes that specify where the data is taken from into MODEL-SIMULATOR.

- **`campaignPath`**: Path of the ECU test workspace in zipped format.
- **`vehiclePath`**: Path of the vehicle configurations in zipped format.
- **`name`**: Name that applies to the current execution.

  Following conventions have to be fulfilled for `name`:

Maximum characters:	200
Can only start with any:	lower case characters upper case characters numbers special characters: `_ .`
Can contain any:	lower case characters upper case characters special characters like: `! - _ . ' ( )`
Not allowed:	other special characters white spaces

- The campaign is uploaded with the given name. After uploading, it will be used again for the next execution if the same name is specified.
- If you intend to change the campaign or vehicle, the "`name`" field needs to be updated. When you use the same name and just change the campaign/vehicle path, you will simply use the previous campaign/vehicle uploaded with the specified name.
- The project uses the same name to which the sequence number is appended. For example, if the name in the file is `TEST_CASE_FMPY`, then the project name for the first run is `TEST_CASE_FMPY.1`. This number is incremented continuously for the same name.
- The name of the test group is the same as that of the project.

— **`toolSpec`**: Set of tool specification.

- **`tools`**: Specification of the tools to be used.

  a. **`name`**: Name of the tool.

     `version`: Corresponding version of the tool.

  b. **`name`**: Name of the tool.

     `version`: Corresponding version of the tool.

> **Note**
>
> If you want to test using a set of tools, you need to mention the name of the tool and the corresponding version for the set of tools.
>
> Example:
>
> — name: ECUTEST
>
> version: 2023.2.3
>
> — name: COSYM
>
> version: 3.2_HF2
>
> For more information see"Supported Use Case" on page 10 and "Toolchain and Tool Versions" on page 10. Also see the column 'Tools' under "Toolchain and Tool Versions" on page 10. You need to use the same tool name and the corresponding supported versions here in the yaml file.

Properties	Mandatory	Description
vehiclePath	No	Mandatory for test execution with COSYM only.
ToolSpec	Yes	Always required irrespective of the tool chain combination.
name	Yes	Always required irrespective of the tool chain combination.
campaignPath	Yes	Always required irrespective of the tool chain combination.

outputProperties

Path where MODEL-SIMULATOR writes the data. It is only applicable if the run is triggered without `nowait flag`.

- **downloadPath**: Path to which the reports on the completed test execution are downloaded.

cliConfig

Configuration for the MODEL-SIMULATOR CLI workflow (optional field). The default value is `INFO`.

- **consoleLogLevel**: Depending on the log level set, you get the information in the command prompt. Possible values are:
  - ERROR
  - FAILED
  - INFO
  - DEBUG
  - TRACE
    This is applies only to the current command.

4.1.7 Test Status

4.1.7.1 Description

Gets the status of the specified test execution reference name.

> **Note**
>
> It is assumed that the project name and the name of the text execution group are identical.

4.1.7.2 Syntax

```
ecs test status [ --format | -f ] [ <format value> ] [<ref-
erence_name>]
```

- **status:** get the status of the group

> **Note**
>
> This command returns only the group level execution status, i.e. `RUNNING\PROCESSING\COMPLETED\ERROR` if the format is not specified.

4.1.7.3 Options

Name	Required	Description
--format I -f	No	Specifies the format in which the output is to be printed. **Type:** String **Supported values:** JSON, TABLE
reference_name	Yes	Name of the test execution whose status is to be displayed.

4.1.7.4 Examples

- `ecs test status -f JSON TEST_CASE_FMPY.1`
- `ecs test status TEST_CASE_FMPY.1`
- `ecs test status --format TEST_CASE_FMPY.1>`

4.1.8 Test Download

4.1.8.1 Description

Downloads the results of the completed test execution to the specified path.

> **Note**
>
> It is assumed that the project name and the name of the text execution group are identical.

4.1.8.2 Syntax

```
ecs test download [ < --downloadPath | -p > ] [ < Path > ]
[<reference_name>]
```

- **download:** download the results

4.1.8.3 Options

Name	Required	Description
--downloadPath I -p	Yes	Location where the report must be downloaded
reference_name	Yes	Name of the test execution whose results are to be downloaded.

4.1.8.4 Examples

- `ecs test download -p C:\\temp`
- `ecs test download --downloadPath C:\\temp`

4.1.8.5 Behavior of Download Command

The `download` command downloads the test execution results for a specific project reference provided the results are available. By default, the download command waits until the archiving of the results are completed. Additionally, a specific time can be configured to wait for the download to complete. In case, the duration to download exceeds the configured limit then the download command terminates.

> **Note**
>
> The download of the results is possible even for a test execution group that has a mixture of completed and failed runs. When a download is triggered on such a test execution group, the partial results are downloaded.

4.1.8.6 Timeout Parameters

There are timeout parameters for the download command:

- `maxRequests` (optional): This is the number of counts that CLI needs to check with ECS cloud whether the archive of the requested test results are competed. It is not mandatory to specify this number. If this number is not specified, the check will be performed until the download is completed.
- `requestFrequency` (optional): This is the wait time between each check of whether the process was completed.
  - It the `requestFrequency` value is less than 1000, the default value of requestFrequency will be set as 1000.
  - If there is no value set for `requestFrequency`, then the default value for `requestFrequency` is 5000.

```
download:
  maxRequests: 50
  requestFrequency: 5000
```

Fig. 4-1: Timeout parameters

4.2 Additional Features

4.2.1 Changing logLevel and Logfile Directory

It is possible to change the `logLevel` and Logfile Directory by using `logPath` in output section in the `externalConfig.yml`.

- logLevel (optional): To change the Log level with respective to application for which the respective information will be logged in log files. If a logpath is not specified, then by default the log path will be created in the `.ecs` (home) directory.

  Possible values for logLevel:

  - OFF
  - FATAL
  - ERROR
  - INFO
  - DEBUG
  - TRACE
  - ALL

- logPath (optional): To change the folder location where the CLI logfile to be created.

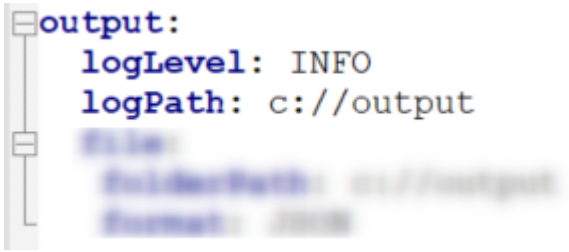


Fig. 4-2: LogLevel and logPath

4.2.2 Saving the Command Output in an External File

4.2.2.1 Description

When a command is executed in the MODEL-SIMULATOR CLI, certain information is output on the command prompt and also in the log file. The subsequent command execution sometimes requires this information as an argument. As a result you must parse the output to extract the data which is cumbersome. To enable this, the MODEL-SIMULATOR CLI provides a configuration where the information about the current command executed and the output of the same could be persisted in a json file. The configuration must be provided in the `externalConfig.yml` file as below.

Output

- file
  - folderPath: <valid folder path to store the output file>
  - format: JSON

Name	Required	Description	Accepted Values
output.file.folderPath	Yes (Not mandatory for the MODEL-SIMULATOR CLI functioning)	Folder location where the output json to be created.	[ValidFolderPath]
output.file.format	No	Used to provide a format in which the output file needs to be created. Currently only JSON format is supported.	JSON/[blank]

The output file name is the name of the test execution given by the user without the sequence number.

E.g., if you execute the status command by giving the reference name as `TEST.1` then the file name will be `test.json`.

All the subsequent commands executed for the same name, will be part of the `test.json` file.

When the next command is executed for the same reference name, the previously executed command info will be part of the same file in the history section.

> **Note**
>
> Only if the command execution is success, then information is persisted.
>
> If an invalid folder path is provided, then MODEL-SIMULATOR CLI will provide an error message and proceed with the command execution.
>
> The value for the config properties `output.file.folderPath` and `output.file.format` should not start with @ symbol.

When you try to execute a command with a project name that differs only by its case and its sequence number, the output of those commands gets stored in a single JSON file.

As the Windows operating system treats two file names that differ only in upper and lower case as a single file, this problem occurs, also described in Fig. 4-3 and Fig. 4-4

```
C:\Users\      >ecs test run -nw D:\ETAS_CLI\InputProperties.yaml

Consent provided for safety advice through external config

Input properties loaded: Successful
Username:
Password:
User login: Successful
New test execution project created with name: projectname.1
Test execution trigger: Successful

C:\Users\      >ecs test run -nw D:\ETAS_CLI\InputProperties.yaml

Consent provided for safety advice through external config

Input properties loaded: Successful
Username:
Password:
User login: Successful
New test execution project created with name: PROJECTNAME.1
Test execution trigger: Successful
```

Fig. 4-3: Project names with upper and lower case

```
"commandInformation": {
   "name": "PROJECTNAME.1",
   "lastExecutedCommand": "ecs test run -nw D:\\
   "timestamp":
},
"history": [
    {
        "name": "projectname.1",
        "lastExecutedCommand": "ecs test run -nw D:\\
        "timestamp":
```

Fig. 4-4: JSON file output

To solve the problem, see "Making a Directory Case-Sensitive In Windows" on page 36.

4.2.2.2 Sample Configuration File

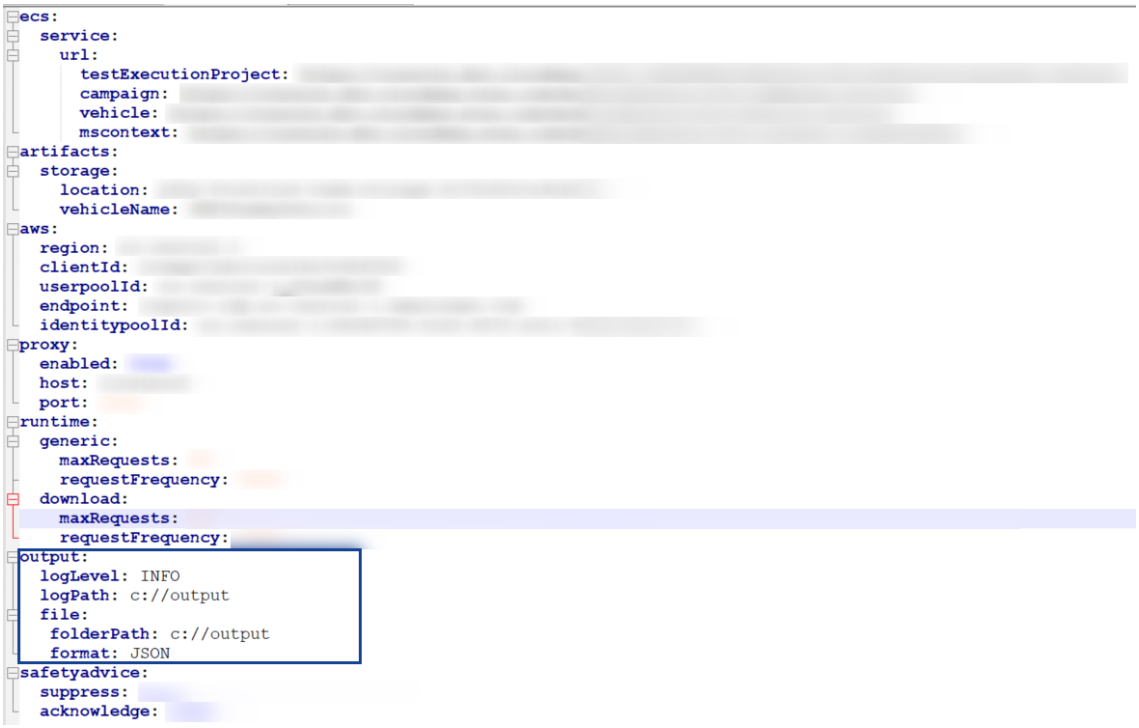


Fig. 4-5: Sample Configuration File

4.2.2.3 Output File Details

The file has two sections:

- commandInformation
- history

commandInformation

This section contains the output information of the recently executed command which can be used as input to the other commands.

- `name`

  Name that applies to the current execution with sequence number which will indicate the number of retries done with the same inputs passed.

- `lastExecutedCommand`

  Command that got triggered recently for the particular test execution.

- `timestamp`

  Timestamp in which the mentioned command is executed for the particular test execution.

- `downloadedPath` as download command

  Contains the test result downloaded path when the command gets executed.

- `status` as status command

  Contains the details as below:

- `resultStatus`

  Contains the result information

  - `total`: The total number of test cases ran as.
  - `inconclusive`: The number of test cases where the result is inconclusive.
  - `success`: The number of test cases where the result is a success.
  - `error`: The number of test cases where the result is an error.
  - `unavailable`: The number of test cases where the result is not available

- `executionResult`

  Contains the test execution status.

history

This section contains all the information of the previously executed commands, arranged in a manner where the most recently executed command information can be found first.

4.2.3 Making a Directory Case-Sensitive In Windows

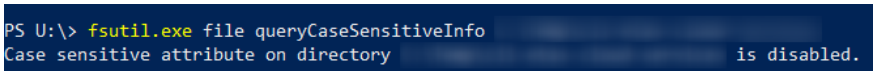
4.2.3.1 Prerequisites

Changing the case-sensitivity of a directory require elevated permissions (Administrator rights). Changing the case-sensitivity flag also requires “Write attributes”, “Create files”, “Create folders” and “Delete subfolders and files” permissions on the directory. For more information, see the this troubleshooting.

4.2.3.2 Check If Case-Sensitivity is Enabled

1. Execute the command "`fsutil.exe file queryCaseSensitiveInfo <path>`" in the PowerShell where `<path>` needs to be replaced with your file path.

   The command output will look like the below:

4.2.3.3 Enable Case-Sensitivity of an Existing Directory

1. To change a directory in the Windows file system so that it is case-sensitive (FOO ≠ foo), run PowerShell as Administrator.
2. Execute the command "`Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Windows-Subsystem-Linux`".

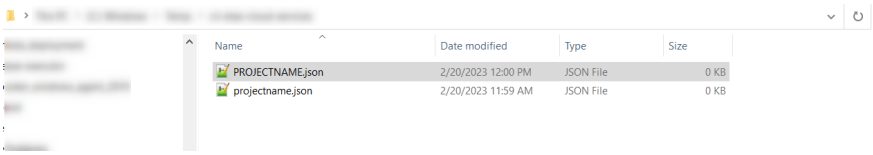
⇨ After being completed, a restart is required.

3. Execute the restart.
4. Execute the command "`"fsutil.exe file setCaseSensitiveInfo <path> enable`" where `<path>` needs to be replaced with your file path.

The command output will look like the below:

```
PS C:\WINDOWS\system32> fsutil.exe file SetCaseSensitiveInfo                    enable
Case sensitive attribute on directory                          is enabled.
```

➪ After executing the above command you are able to save two files with name that only differs in cases in the same directory.



4.2.3.4 Disable Case-Sensitivity of an Existing Directory

1. To change a directory in the Windows file system back to the case-insensitive default (FOO = foo), run PowerShell as Administrator.
2. Execute the command "`fsutil.exe file setCaseSensitiveInfo <path> disable`" where `<path>` needs to be replaced with your file path.

➪ If the requested directory has files with names that only differ in its case then you will end up in an error like below:

```
PS C:\WINDOWS\system32> fsutil.exe file setCaseSensitiveInfo C:\Temp\cli-etas-cloud-services disable
Error:  This directory contains entries whose names differ only in case.
```

3. Remove those files and try to execute the command again.

➪ After executing the above command, the case-sensitivity is disabled.

```
PS C:\WINDOWS\system32> fsutil.exe file setCaseSensitiveInfo C:\Temp\cli-etas-cloud-services disable
Case sensitive attribute on directory C:\Temp\cli-etas-cloud-services is disabled.
```

5 Error Scenarios

When working with MODEL-SIMULATOR CLI, you may receive error codes in the CLI. An overview of possible error scenarios and how to correct them is given in the following table.

Error Code	Error Description	Scenario
1020000012	User sign-in failed due to Incorrect username or password. Try again with valid user credentials.	Provided user credentials like user name and password as an environmental/command prompt is invalid (non empty but invalid).
	The user sign-in failed as only technical user credentials are permitted for CLI authentication. Contact Operations team for relevant technical user details.	Provided non-technical user credentials, CLI supports only technical user.
	The password has to be changed before the first login. Reset the initial password in MODEL-SIMULATOR GUI and retry.	The provided technical user credentials has been used without resetting the initial password.
	User sign-in failed due to User pool client XXX does not exist. Try again with valid user credentials.	An error occurred while trying to sign in user using the login credentials provided.
1020000029	Failed to start the test execution. The upload of the campaign is unsuccessful due to an internal error. Try re-uploading the campaign.	An error occurred while trying to upload or create a campaign.
1020000030	Failed to complete the run command execution. Possible reasons: – Internal API call failed. – Server error while processing the request. Contact the Operations team.	An error occurred while trying to get the status of a project or group after a test execution was successfully triggered.

1020000036	Failed to complete the run command execution as the download of results failed. It is possible that the download path provided is not valid or some internal error occurred. Try downloading again or if the issue persists, contact Operations team.	An error occurred while trying to download the test result of the test execution.
1020000046	Failed to get the status of the test execution. The provided reference name XXX is not found. Provide the proper project/group reference.	CLI was not able to find the mentioned test execution project/group with the given reference name.
1020000051	Failed to download the result. The test execution is in PROCESSING state for the requested reference name and hence no results are available for download. Try downloading the results after sometime.	The results could not be downloaded as the execution is in progress.
	Failed to download the result. The result archive is in RESULTS_SUBMITTED_FOR_ARCHIVE state for the requested reference name. Wait until the result archive get concluded.	The results could not be downloaded as archiving of results is not completed.
	Failed to download the result. The result archive is in ARCHIVE_REQUEST_TERMINATED state for the requested reference name and hence no results are available for download. Contact the Operations team.	The results could not be downloaded as the archive status is TERMINATED.

1020000052	Failed to complete the run command execution as the download of results failed. An interruption occurred while trying to wait for the results to be archived. Try downloading after some time.	An error occurred while trying to wait until the archive of the test execution result was completed.
1020000053	Failed to complete the run command execution as the download of results failed. The time for archiving of the results exceeded the configured time limit. Try downloading the results after some time.	The archiving of the test execution result took more than the configured time.
1020000064	The provided tool combinations contains duplicate entries. Remove duplicate entries in `InputProperties.yml` and retry.	Duplicate entries in the input properties for the tool lists.
1020000065	The provided tool combinations or their corresponding versions are unsupported. Refer to the CLI user guide for supported tool combinations/versions.	Provided tool versions and its combinations are invalid.
1020000071	Failed to start the test execution. Upload of the artifact failed due to Identity Pool XXX not found. Try again with proper identity pool ID.	An error occurred while trying to upload or create a artifact as the identity pool ID configured in the external configuration file is incorrect.

1020000080	The provided reference name XXX has invalid characters. Refer to the CLI user guide for a list of allowed characters.	Reference name provided in `Input-properties.yaml`/ command arguments has invalid characters. See General Conventions for Uploaded Data for a list of allowed characters.

1020000081	Failed to start the test execution. The provided campaign path does not exist or is not readable. Provide a valid campaign path.	The campaign path provided is not valid.
	Failed to start the test execution. The provided name: {name-value} has more than {max-character-limit} characters. Provide a name within {max-character-limit} characters.	The provided value for `name` has more than 200 characters.
	Failed to start the test execution. The provided reference name XXX has invalid characters.	The provided value for `name` has invalid characters. See General Conventions for Uploaded Data for a list of allowed characters.
	Failed to start the test execution. The provided campaign path does not exist or is not readable. Provide a valid campaign path.	The provided campaign path does not exist. The provided campaign path exists but not readable.
	Failed to start the test execution. Provided campaign file extension is not supported. Provide campaign file in zip format.	The provided campaign path is not in ZIP format.
	Failed to start the test execution. Download path is not provided and is mandatory when test execution is triggered in wait mode. Provide a valid download path.	The mandatory download path is not provided when test execution is triggered in wait mode.
	Failed to start the test execution. The provided download path does not exist or is not writable. Provide a valid download path.	The provided download path does not exists in the local folder path. The provided download path is not writable.

	Failed to start the test execution. The provided vehicle path does not exist or is not readable. Provide a valid vehicle path.	The provided vehicle path does not exist. The provided vehicle path exists but not readable.
	Failed to start the test execution. The provided vehicle file extension is not supported. Provide vehicle file in zip format.	The provided vehicle path is not in ZIP format.
1020000122	Unable to cache the user authentication information. Check the configFile write permissions inside `ecs` folder. Retry sign in and if the issue persists, contact Operations team.	Error occurred while caching the authentication information.
1020000141	Failed to start the test execution. The provided user credentials are empty. Try again with valid user credentials.	Provided user credentials like user name and password as an environmental variable/command prompt is an empty string.

1020000164	Failed to start the test execution as the uploaded campaign was in UNAVAILABLE status. The campaign is unavailable because the .workspace folder/s Packages folder/s Configurations folder/s in Root folder were not found. Refer to the user documentation for correct test campaign configuration	Corrupted campaign or missing mandatory folders within campaign ZIP file.
	Failed to start the test execution. The uploaded campaign was in UNAVAILABLE status. The campaign is unavailable because the uploaded zip file was empty. Refer to the user documentation for correct test campaign configuration.	Campaign ZIP file is empty.
1020000168	Failed to start the test execution. An interruption occurred while trying to get status for the Campaign. Try uploading the Campaign after some time and if the issue persists, contact Operations team.	An error occurred while trying to wait until the campaign came to AVAILABLE status.

1020000169	Failed to start the test execution. The uploaded campaign is in PROCESSING status. Increase the value of numberOfRetries attribute in the external configuration file and try to trigger test execution again.	The created campaign was not in an AVAILABLE state within the configured time, hence could not proceed further.
1020000181	Failed to start the test execution. The vehicle with name XXX was not found. Contact Operations team for more information.	CLI was not able to find the vehicle with the given vehicle name value in the external configuration file.
1020000187	Failed to start the test execution. The upload of the vehicle is unsuccessful due to an internal error. Try re-uploading the vehicle.	An error occurred while uploading vehicle.
1020000188	Failed to start the test execution. The uploaded vehicle is in PROCESSING status. Increase the value of maxRequests attribute in the external configuration file and try to trigger test execution again.	The created vehicle was not in an AVAILABLE state within the configured time, hence could not proceed further.
1020000191	Failed to start the test execution. The uploaded vehicle was in UNAVAILABLE status. The vehicle is unavailable because the mandatory deployable zip file is not found. . Refer the user documentation for more detailed information about the model configuration	Corrupted vehicle or missing mandatory folders within vehicle ZIP file. Vehicle ZIP file is empty.

1020000203	Failed to start the test execution. The provided path does not have the necessary security permissions to be read/written. Provide a valid path with the necessary permissions.	The provided path (campaign path, vehicle path, download path) in `inputProperties.yaml` does not have the necessary security permissions to be read/written.
1020000226	The mandatory `externalConfig.yml` could not be found at `${user.home}/.ecs/`. Ensure the file is placed in the designated location and retry the operation.	`externalConfig.yml` file is missing in the `${user.home}/ecs` directory.
1020000265	Failed to read/display the Safety advice. The safety advice packed with the client is either missing or corrupted. Contact the Operations team.	An error occurred while trying to read the safety advice document to display to the user.
1020000270	The requested output format: {requestedOutputFormat} is invalid, and the acknowledgement messages cannot be saved in the requested format. The supported format is JSON.	The provided output format provided in external configuration file for the history file is not supported.

1020000279	Failed to start the test execution. Property key XXX should be present under XXX in `externalConfig.yaml` / `InputProperties.yaml`. Update the mentioned file/-files with the suggested changes and retry.	Mandatory key not provided in the external configuration file/`InputProperties.yaml` file.
	Failed to start the test execution. Property value of XXX cannot be empty in `externalConfig.yaml` / `InputProperties.yaml`. Update the mentioned file/-files with the suggested changes and retry.	Value is not provided for mandatory key in the external configuration file/`InputProperties.yaml` file.
	Failed to start the test execution. Property value of XXX cannot be empty and should be either true or false in `externalConfig.yaml` / `InputProperties.yaml`. Update the mentioned file/-files with the suggested changes and retry.	Empty value is provided for mandatory key in the external configuration file/`InputProperties.yaml` file.
	Failed to start the test execution. External config file/Configuration properties file is empty. Update the mentioned file/files with the suggested changes and retry.	External configuration file is empty.

	Failed to start the test execution. Property key of 'XXX' under 'XXX' is missing or value of 'XXX' cannot be empty for the provided tool combinations in `externalConfig.yml`. Update the mentioned file/-files with the suggested changes and retry	Value is not provided for mandatory key in the external configuration file/`InputProperties.yml` file.
	Failed to start the test execution. Property key of 'XXX' under 'XXX' is missing or value of 'XXX' cannot be empty for the provided tool combinations in `externalConfig.yml`. Update the mentioned file/-files with the suggested changes and retry.	Empty Value is provided for mandatory key in the external configuration file/`InputProperties.yml` file.
1020000282	CLI startup failed. The provided `externalConfig.yaml` is invalid. — Property keys may be duplicate. — Wrong indentation/spaces around the property — Special/junk characters around property keys. Make sure the file is valid by considering the suggested points and retry or contact operations team.	Misaligned one/multiple key in the yaml file. A mandatory set of key is repeated. Special characters provided in front of any mandatory key. E.g. '!' was added in front of Key 'artifacts'. Some invalid special characters are **-! › } ı]** ,.

1020000283	Failed to start the test execution. YML/YAML processing failed due to configuration properties file being invalid. – Property keys may be duplicate. – Wrong indentation/spaces around the property keys/values in the files. – Special/junk characters around property keys. Make sure the file is valid by considering the suggested points and retry or contact operations team.	Special characters provided in front of any mandatory key. E.g. '!' was added in front of Key 'artifacts'. Some invalid special characters are **-! › } I]** ,.
1020000285	CLI startup failed. Contact operations team.	CLI fails to start because of some configuration issue.
1020000290	The arguments provided in the command is invalid. Check the argument or syntax and try again.	Invalid arguments provided during command. Double - with a space. Eg: (**double hyphen is before nw**) `ecs test run – nw C:\TestData\Cli_Testing\InputProperties.yml`
1020000301	Valid value was not provided for safety advice. Provide a valid value.	Acknowledgment provided for safety advice with an invalid value.

1020000320	Consent to safety advice was not provided. Provide consent to proceed with command execution.	Acknowledgment provided for safety advice with an invalid value.
1020000321	— Internal API call failed. — Server error while processing the request. Contact the Operations team.	Any error that occurred apart from the specific once listed in this table.
1020000323	CLI startup failed. Property value of 'logpath' is not valid in `externalConfig.yml`. Provide a valid path.	Invalid logpath provided in the external configuration file that contains certain restricted special characters/character combinations. (E.g. add `%&` in the logpath).

6 FAQ

6.1 Why is My Performance Low?

If you notice a performance lag when executing MODEL-SIMULATOR CLI commands, you should increase the number of processors to the maximum in your system.

To increase the number of processors

1. Open run command by pressing **Windows + R**.
2. Execute `msconfig` to open a new window.
⇨ The **System Configuration** Window opens.
4. Navigate to **Boot** tab.
5. Click **Advanced Options**.
6. Set the value in the **Number of processors** tab to the maximum.
7. Click **OK**.
8. Click **Apply**.

6.2 What Is the Difference Between consoleLogLevel and logLevel

consoleLogLevel in InputProperties.yaml file

Depending on the log level set, you get the information directly in the command prompt, see "cliConfig" on page 28.

LogLevel in the ExternalConfig.yaml file

Depending on the log level set, you get the information in the log file, see "Changing logLevel and Logfile Directory" on page 32.

7 Contact Information

Technical Support

For details of your local sales office as well as your local technical support team and product hotlines, take a look at the ETAS website:

www.etas.com/hotlines

ETAS offers trainings for its products:

www.etas.com/academy

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