3GPP TSG-CT WG4 Meeting #107-e
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Table of contents

- 1 3GPP Forge User Account 3
- 2 Common tasks 6
  - 2.1 Making yaml file
  - 2.2 Syntax check with Swagger
  - 2.3 Using 3GPP Forge tool
- 3 Guidelines for rapporteurs 13
  - 3.1 Checking updated OpenAPI with 3GPP Forge tool
  - 3.2 Adding new API to 3GPP Forge
    - ✓ 3.2.1 Updating README.md file
    - ✓ 3.2.2 Uploading brand new yaml file
    - ✓ 3.2.3 Replacing the existing yaml file
- 4 Maintaining 3GPP Forge tool 1x

(1) 3GPP Forge User Account

(1) Introduction

- This paper is a user manual for the 3GPP Forge tool
- Once you get yourself familiar with the Forge tool, you may find other ways for achieving the same goals
- 3GPP delegates need to have an EOL accounts for accessing various 3GPP and ETSI tools, including 3GPP Forge
  - ✓ check https://portal.etsi.org/createaccount#/home
- If you have an EOL account:
  - ✓ Check if you have necessary access rights to 3GPP Forge tool by logging at https://forge.3gpp.org/rep/all/5G_API

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(1) 3GPP Forge User Account

- If you have necessary access rights, you will see the "+ ^" control icon
  - ✓ Otherwise, contact MCC support team

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(2) Common tasks

(2.1) Making yaml file

- 3GPP Forge tool helps the user to check the syntax of an OpenAPI yaml file and also to cross check if the references to the reused data types are correct
- Download from the web and install Notepad++ app
  - ✓ This is very similar to Notepad, but can parse yaml text, i.e. the Notepad++ shows the resource structure and it also shows the line numbers
- Copy-paste the OpenAPI code, which you want to check into a new Notepad++ file and save it in .txt format
- Check the syntax of the created OpenAPI module with the Swagger tool
  - ✓ https://editor.swagger.io

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(2.2) Syntax check with Swagger

- Click the File tab at the top of the Swagger Editor controls
- Import the .yaml or. txt file with modified API code you want to debug or simply copy/paste it in the left pane

- the **left** pane will show the OpenAPI code, while the **right** pane will show the service contents, like methods, etc.
- At the top of the right pane you will see either an error or a success message

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(2.2) Syntax check with Swagger

- Error messages may not appear to be informative, but give you a tip on which line the problem starts
  - ✓ You must start with fixing the first error, because most likely subsequent errors are caused by this one
  - ✓ Typically, swagger finds indentation errors
  - ✓ Each of the next level entries shall be shifted to the right with two white space characters
  - ✓ Swagger finds all syntactical and also semantical errors
- Once you fix all syntactical errors, you can check the file for other types of errors with 3GPP Forge tool

(2.3) Using 3GPP Forge tool

- Go to the 3GPP Forge GitLab repository: https://forge.3gpp.org/rep/all/5G_APIs
  - Sign in with ETSI AOL credentials
    - Btw, these credentials work also for Jenkins (https://forge.3gpp.org/jenkins)
  - You can use any of the branches, but the master branch is selected by default and it is fine to use this
  - The changes you make cannot be saved, which keep the source code safe
  - Select the branch of the release for which you want to change the yaml file
  - Scroll down to the bottom of the page to "OpenAPI Specification Files for 3GPP 5G Core Network"
  - Locate the API you're interested in, e.g. NRF NFManagement as in the below example
  - Click on the "Editor" link, which shows also the API code
  - "UI" link is less useful, because it does not show the API code

(2.3) Using 3GPP Forge tool

- Click on the HTTP methods, e.g. GET in the right pane and the window will expand
- You will see if there are any links to other OpenAPI yaml files or not
- If there are, the debugger will also show if the links are working or not
- Also check the dependencies with the other yaml files, e.g. if a method uses a data type defined in another OpenAPI file

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(2.3) Using 3GPP Forge tool

- Click on the Subscription and Schemas (e.g. NFProfile, etc.) to check the references and links

(3) Guidelines for rapporteurs

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(3.1) Checking updated OpenAPI with 3GPP Forge tool

- Locate"OpenAPI Specification Files for 3GPP 5G Core Network" section and locate Tools

- Click on API Parser/Linter link. New window opens

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(3.1) Checking updated OpenAPI with 3GPP Forge tool

- Locate the network function, e.g. MB-SM, which provides the API service you are debugging and press the Parse button
- If all is good, you'll see 'Ok' message

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(3.1) Checking updated OpenAPI with 3GPP Forge tool

- Press the Lint button and the tool will give you multiple messages
- Some should be Ok, while others may not, but this is not as big of a problem and parse errors are

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(3.2) Adding new API to 3GPP Forge

(3.2.1) Updating the existing README.md file

- Go to the repo: https://forge.3gpp.org/rep/all/5G_APIs
- Select branch, e.g. Rel17-draft-TSG94, from the drop-down list
- You need to add new API to the README.md file under the selected branch

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(3.2) Adding new API to 3GPP Forge

(3.2.1) Updating the existing README.md file

- Go to the repo: https://forge.3gpp.org/rep/all/5G_APIs
- Select branch, e.g. Rel17-draft-TSG94, from the drop-down list
- You need to edit the README.md file under the selected branch by adding new API to it
- Fill the "Commit message" box with a tip on what you tried to do and commit the changes

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(3.2) Adding new API to 3GPP Forge

(3.2.2) Uploading brand new yaml file

- Next task is to upload new yaml file(s) to the selected branch
- The filename must match the naming convention specified in 3GPP TS 29.501 clause 5.3.6
- Click on the "+ ^" drop down menu and select "Upload file“
- Upload the prepared yaml file
- Fill the "Commit message" box with a tip on what you tried to do and commit the changes

(3.2) Adding new API to 3GPP Forge

(3.2.3) Replacing the existing yaml file

- If you wish to replace the already uploaded yaml file under the desired branch, go back to the main page (https://forge.3gpp.org/rep/all/5G_APIs), locate the yaml file and click on its link
- Push the Replace button and when done commit the changes

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(4) Maintaining 3GPP Forge tool

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(4) Process for 3GPP Forge Maintenance

- No tool is completely perfect
- 3GPP WGs that use this tool should establish a process that will ensure necessary changes to the 3GPP Forge tool are discussed, agreed, tracked and implemented

❑ The below process is proposed:

  - Whenever necessary, 3GPP WGs shall discuss if there is a need to fix Forge tool bug, or if a new Forge feature is necessary
  - It is encouraged that the proposals are done by presenting contributions to agenda item AOB, i.e. the last AOB that is not 3GPP release specific, e.g. agenda item 10
  - The outcome of such discussions shall be documented in the meeting report

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