



APIS IQ-Software: How to get started

APIS
Informationstechnologien GmbH

Copyright

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1. Create a new structure

1. Click on **-Administration-**

2. Select **-Project Management-**

5. Enter structure name

6. Enter structure type

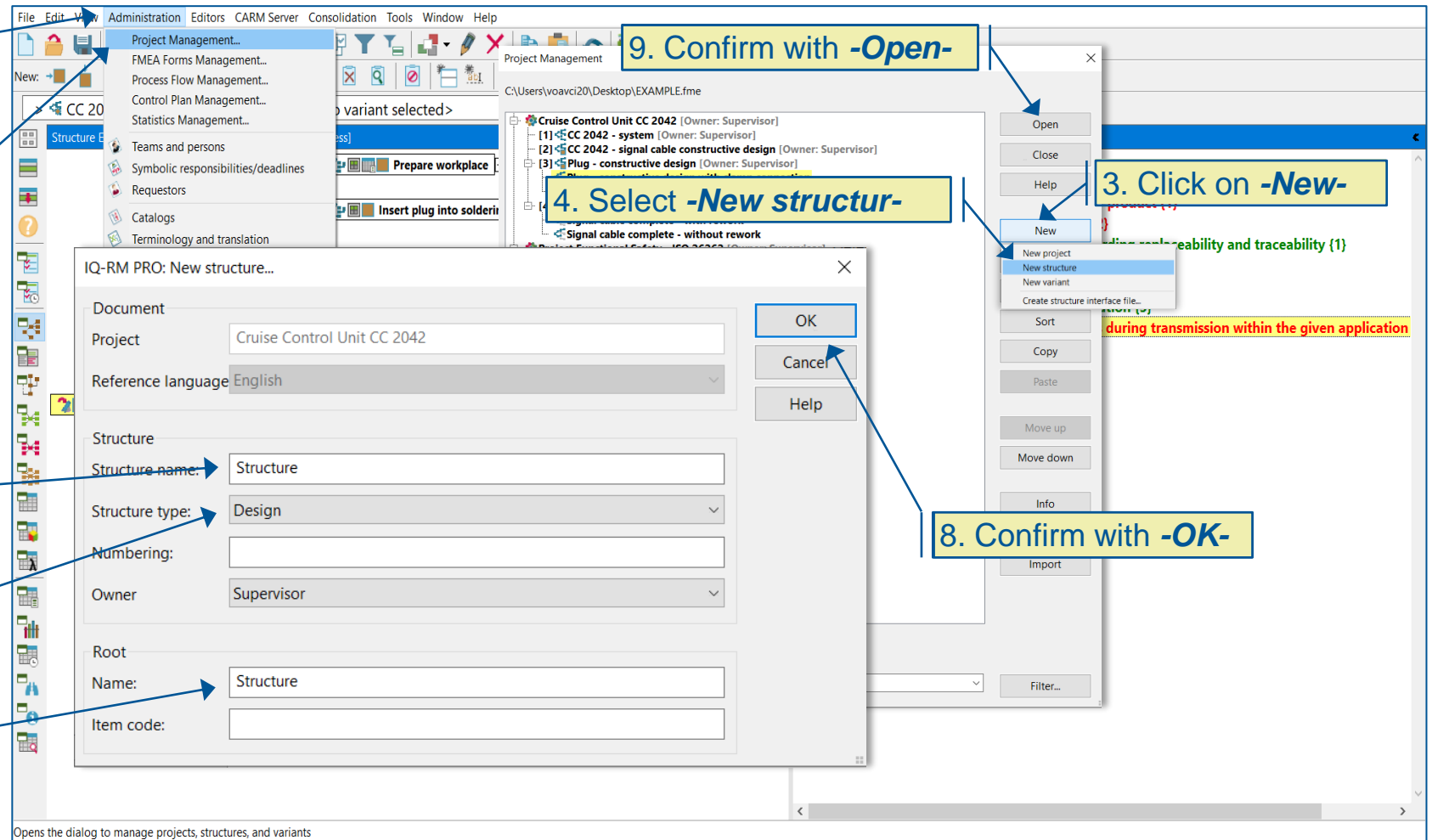
7. Enter root element

9. Confirm with **-Open-**

4. Select **-New structur-**

3. Click on **-New-**

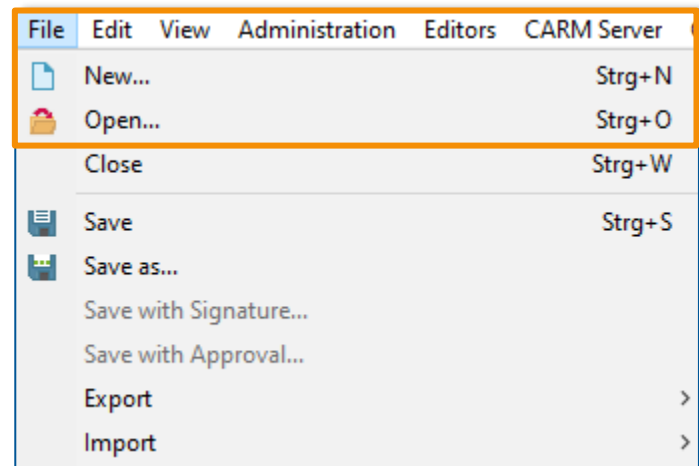
8. Confirm with **-OK-**



Note

Purchased license:

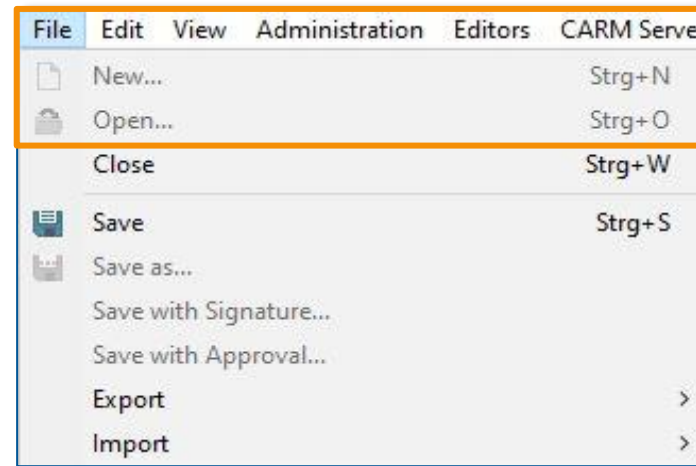
With a purchased license it is possible to create a new file via **"File | New"**. The dialog "Create new structure..." will appear automatically.



Menu topic "File" in newly created FME files

Demo license:

With the demo license it is not possible to create a new file. The "Create new structure..." dialog is activated as described on the previous slide, i. e. via **"Administration | Project management"**.

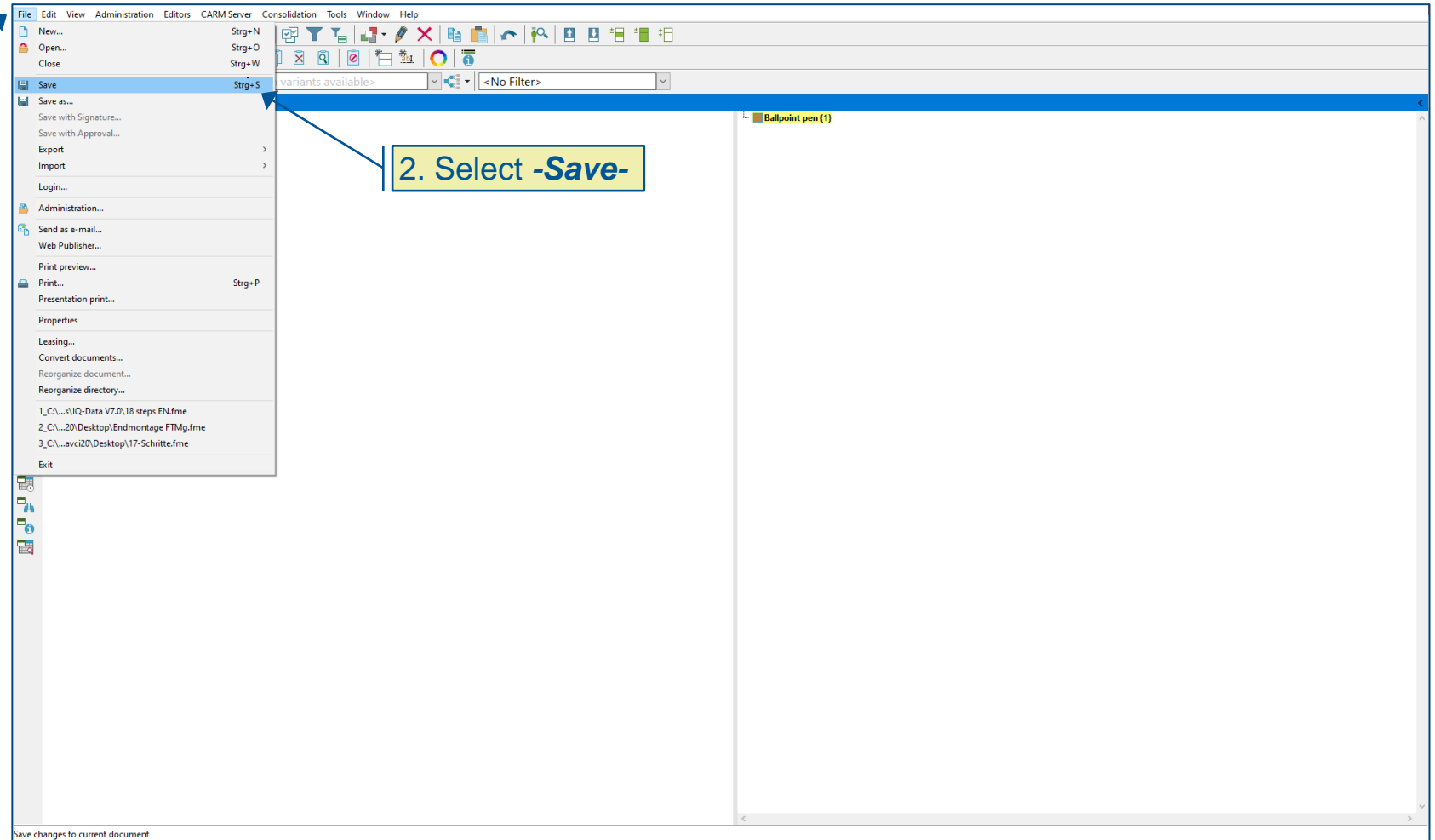


Menu topic "File" only in Example.FME

2. Save new file

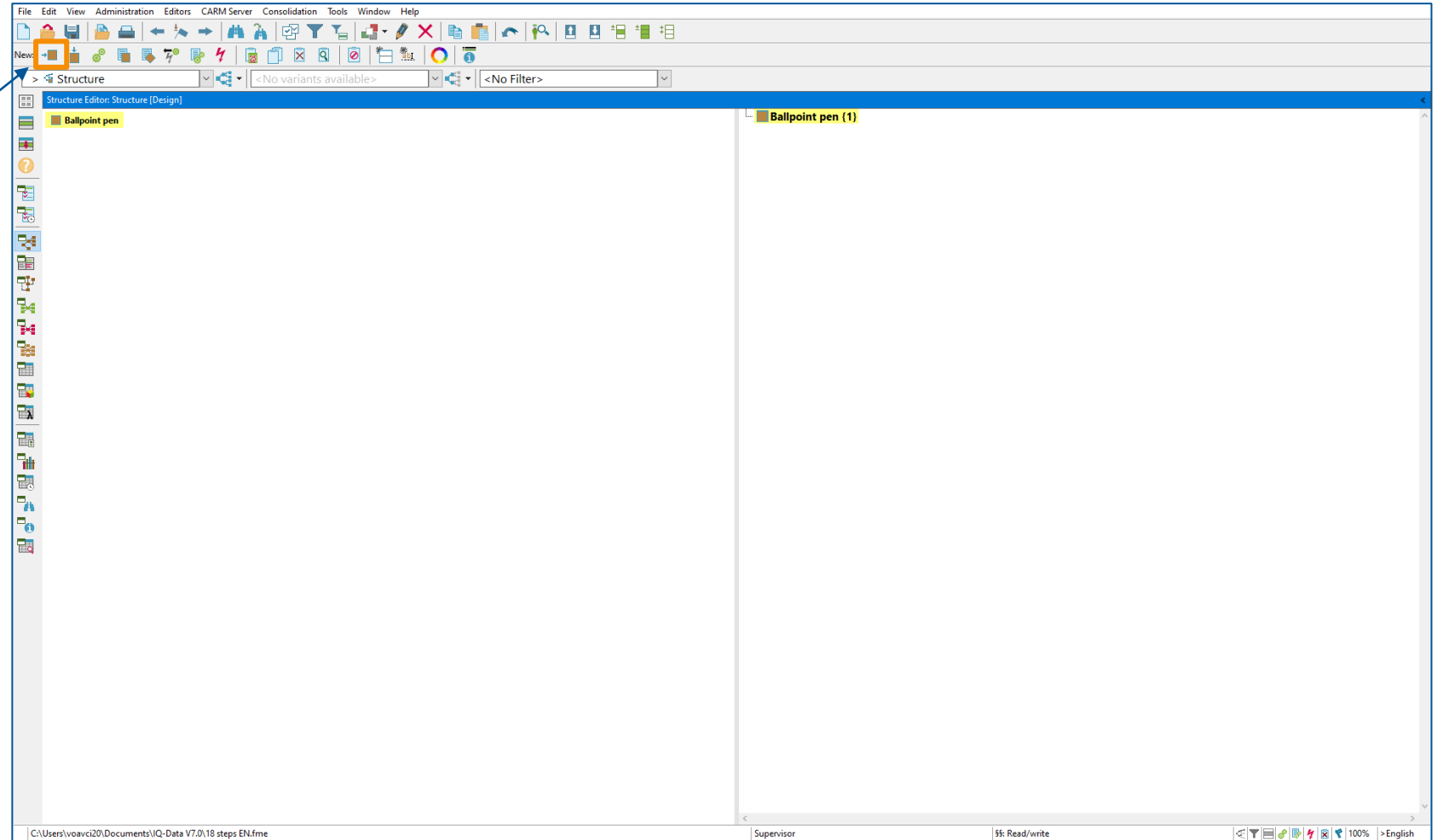
1. Click on **-File-**

2. Select **-Save-**



3. Create system elements (1/3)

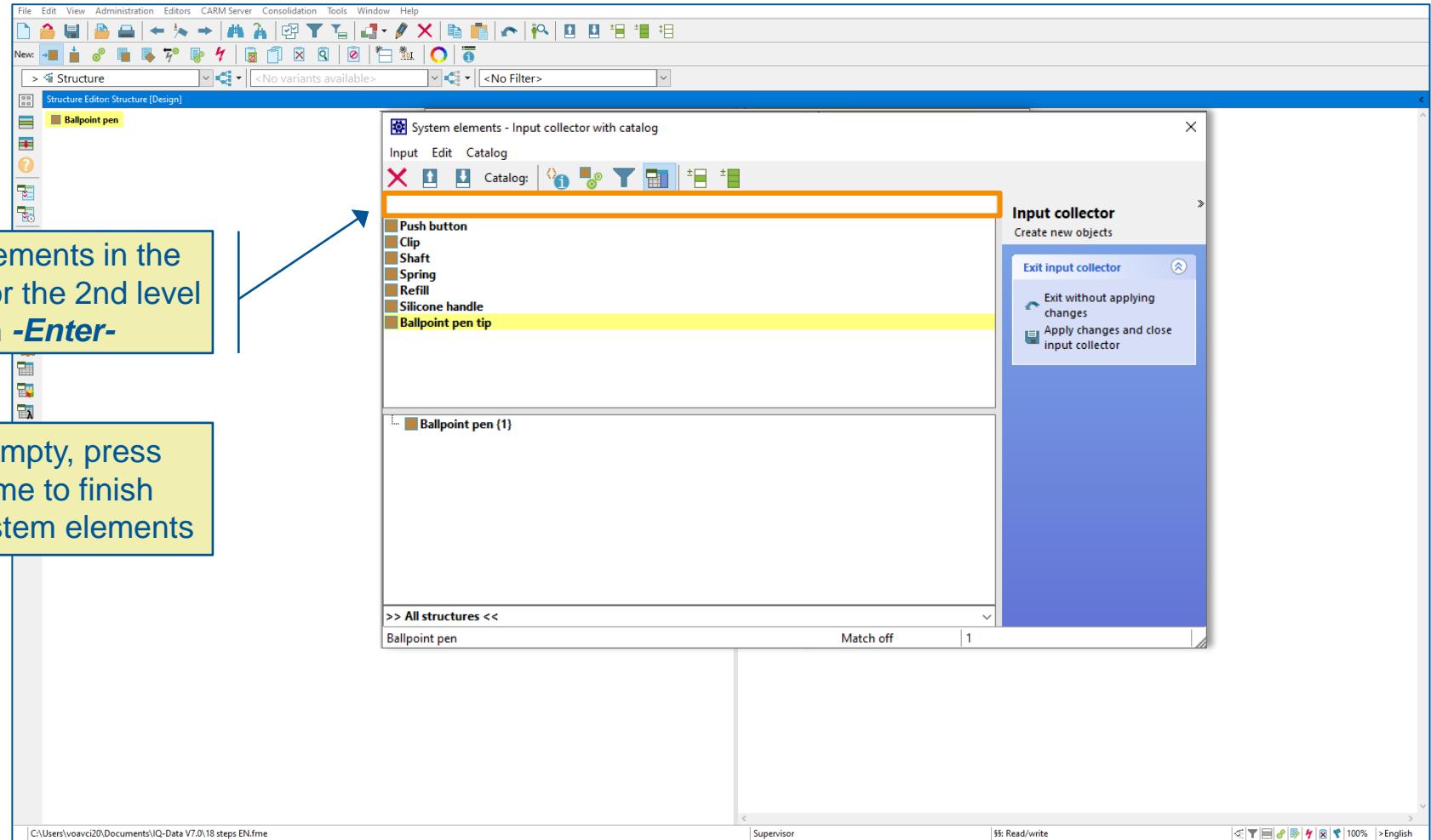
- Select the root element and click on the **-System elements-** icon



3. Create system elements (2/3)

1. Enter system elements in the input collector for the 2nd level and confirm with **-Enter-**

2. If the input line is empty, press **-Enter-** one final time to finish the entry of the system elements

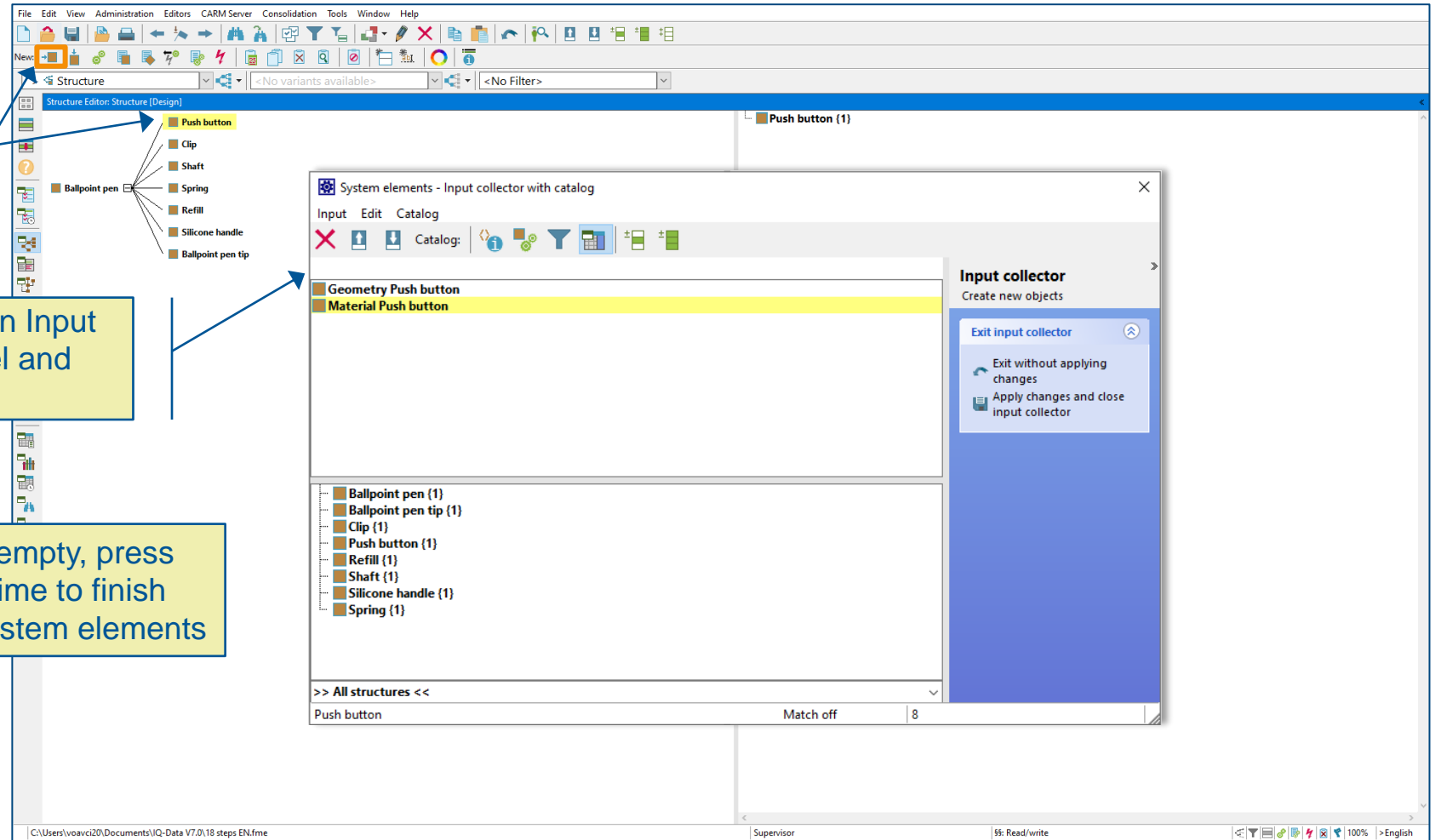


3. Create system elements (3/3)

1. Select a system element of the next level and click on the **-System elements-** icon

2. Enter system elements in Input collector of the next level and confirm with **-Enter-**

3. If the input line is empty, press **-Enter-** one final time to finish the entry of the system elements

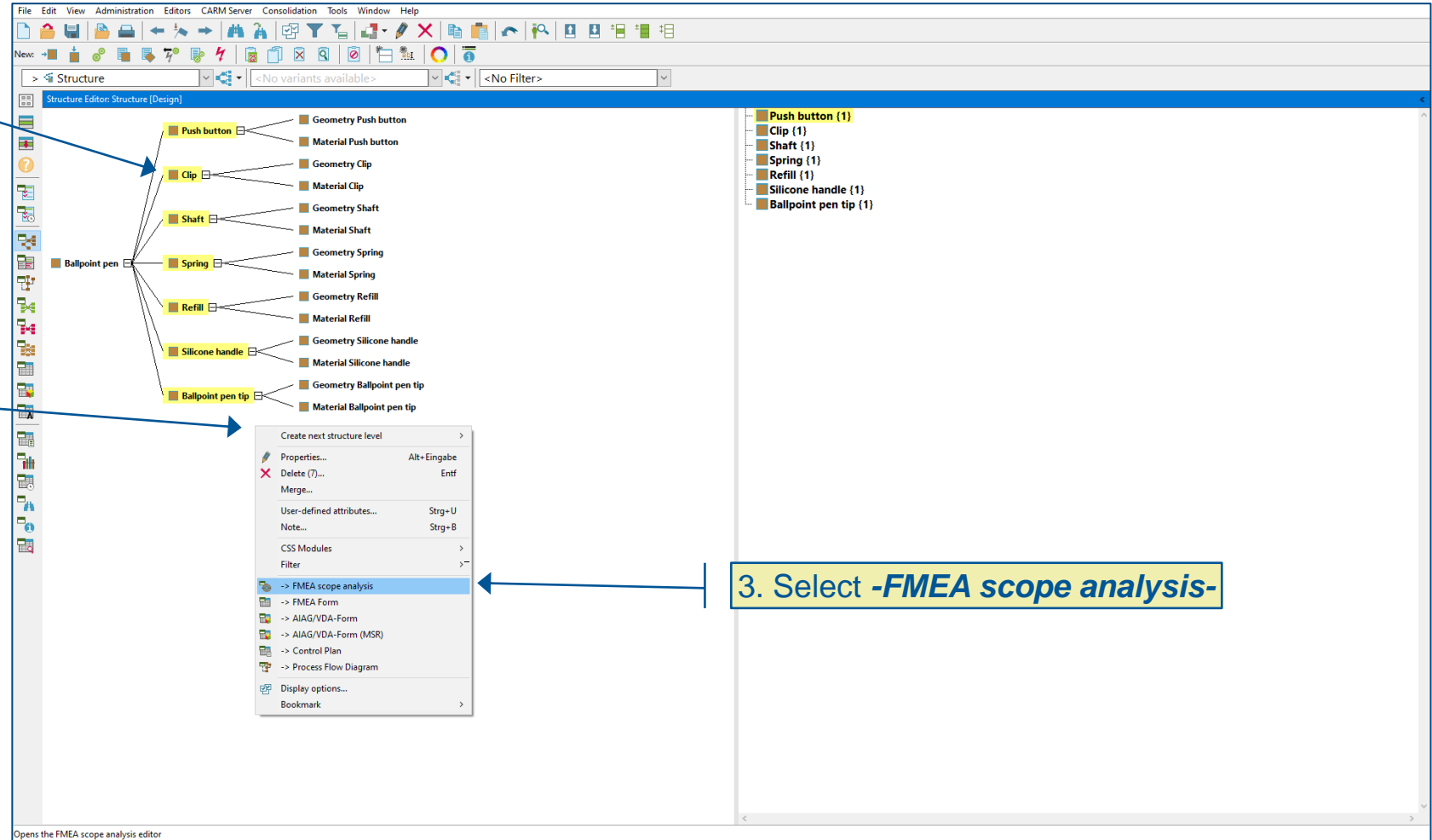


4. Planning and FMEA scope analysis (1/3)

1. Select system elements to be analyzed in the scope analysis

2. Right-click to open the context menu

3. Select *-FMEA scope analysis-*



4. Planning and FMEA scope analysis (2/3)

- The editor for the scope analysis now opens in the second workspace

The screenshot displays the APIS IQ software interface. The top section is the 'Structure Editor: Structure [Design]', which shows a hierarchical tree of components for a 'Ballpoint pen'. The components are: Push button, Clip, Shaft, Spring, Refill, Silicone handle, and Ballpoint pen tip. Each component is further broken down into its 'Geometry' and 'Material' sub-components. A legend on the right lists the components with their counts: Push button (1), Clip (1), Shaft (1), Spring (1), Refill (1), Silicone handle (1), and Ballpoint pen tip (1).

The bottom section is the 'FMEA scope analysis: Structure [Design]' table. It contains the following data:

System element	Reference product or process	Information source	Valuation Criteria (FMEA Scope)						Risk potential	No FMEA consideration required	Note	Reference FMEA
			Novelty of technology / degree of innovation	Quality / reliability history (In-house, zero mileage, field failures, warranty and policy claims for similar products)	Complexity of design	Safety of people and systems	Cyber-physical system (including cyber-security)	Legal compliance				
Push button (1)									No	<input type="checkbox"/>		
Clip (1)									No	<input type="checkbox"/>		
Shaft (1)									No	<input type="checkbox"/>		
Spring (1)									No	<input type="checkbox"/>		
Refill (1)									No	<input type="checkbox"/>		
Silicone handle (1)									No	<input type="checkbox"/>		
Ballpoint pen tip (1)									No	<input type="checkbox"/>		

4. Planning and FMEA scope analysis (3/3)

The screenshot shows the 'Structure Editor: Structure [Design]' window with a tree view of system elements. Below it is the 'FMEA scope analysis: Structure [Design]' table. The table has columns for 'System element', 'Reference product or process', 'Information source', 'Valuation Criteria (FMEA Scope)', 'Risk potential', 'No FMEA consideration required', 'Note', and 'Reference FMEA'. The 'Valuation Criteria' section includes: 'Novelty of technology / degree of innovation', 'Quality / reliability history (In-house, zero mileage, field failures, warranty and policy claims for similar products)', 'Complexity of design', 'Safety of people and systems', 'Cyber-physical system (including cyber-security)', 'Legal compliance', and 'Catalog & standard parts'. The 'Risk potential' column has 'Yes' and 'No' options. The 'No FMEA consideration required' column has a checkbox.

Callout boxes provide instructions:

- 1. Refer to possible references as well as the provider of the information or the information source
- 2. By double-clicking in a valuation criterion field an X is set
- 3. If at least one X is set, then automatic change of entry from No to Yes
- 4. The user must intentionally check the box in order to exclude a system element from the FMEA analysis
- 5. Close the second workspace

Note:
According to AIAG/VDA methodology, planning is the first step. A technical implementation at a later stage is possible with the software.

5. Determine functions, product/process characteristics (1/2)

2. Select the icon for:

-Functions-



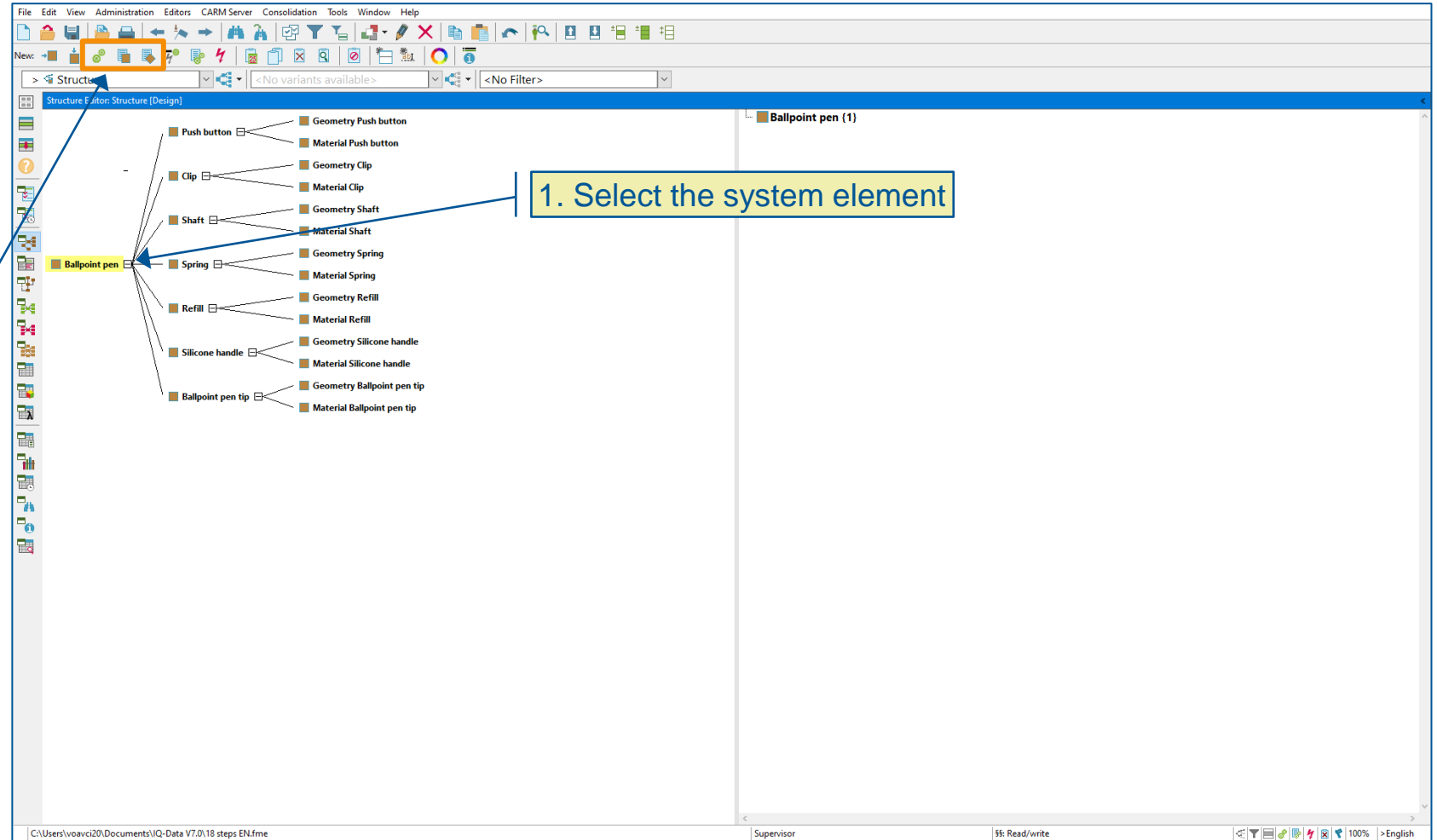
or

-Product characteristics-



or

-Process characteristics-



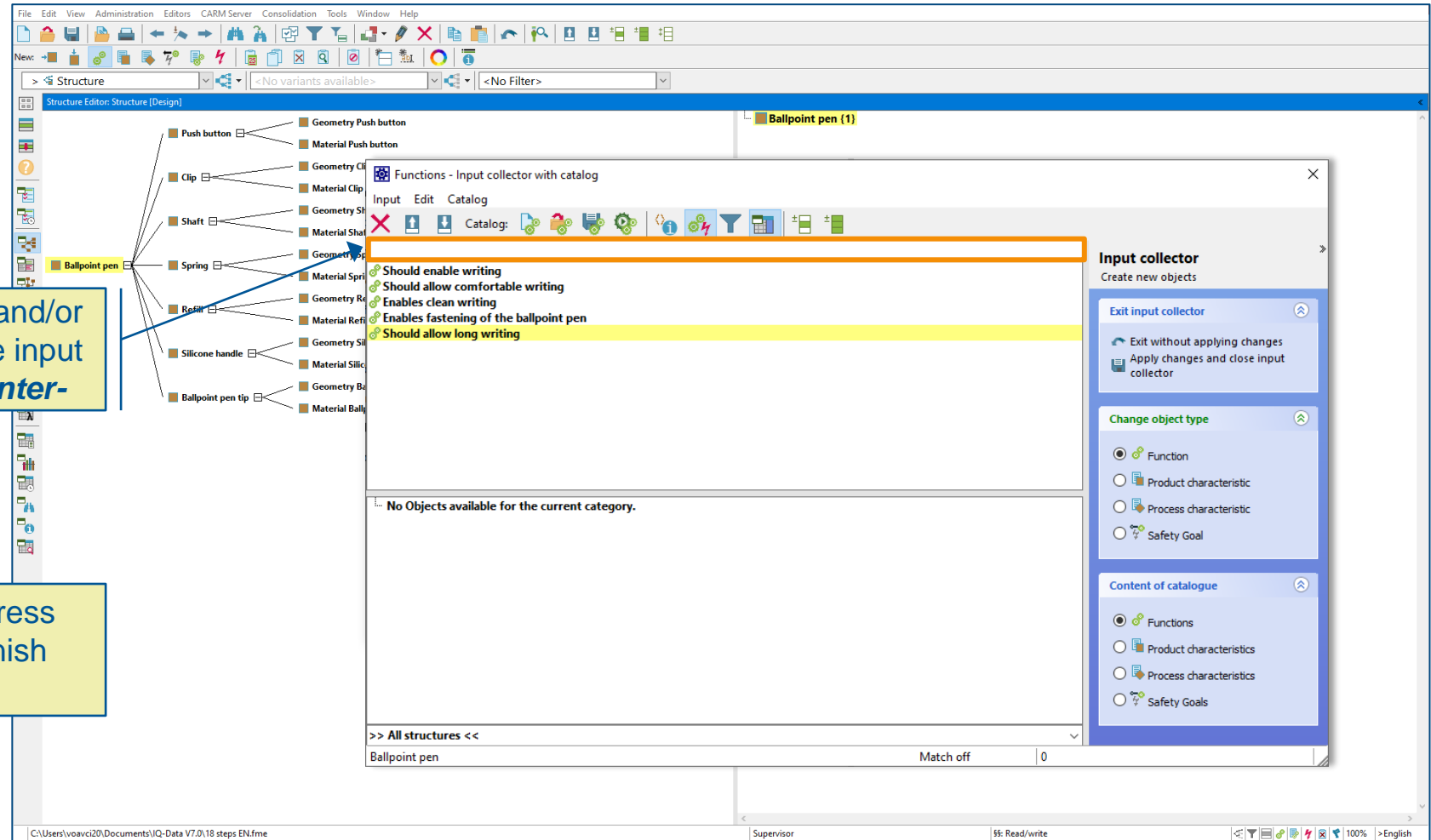
1. Select the system element

Note:
For clarity reasons, the scope analysis hotclick icon is deactivated by display options.

5. Determine functions, product/process characteristics (2/2)

1. Enter the functions, product and/or process characteristics in the input collector and confirm with **-Enter-**

2. If the input line is empty, press **-Enter-** one final time to finish the entry

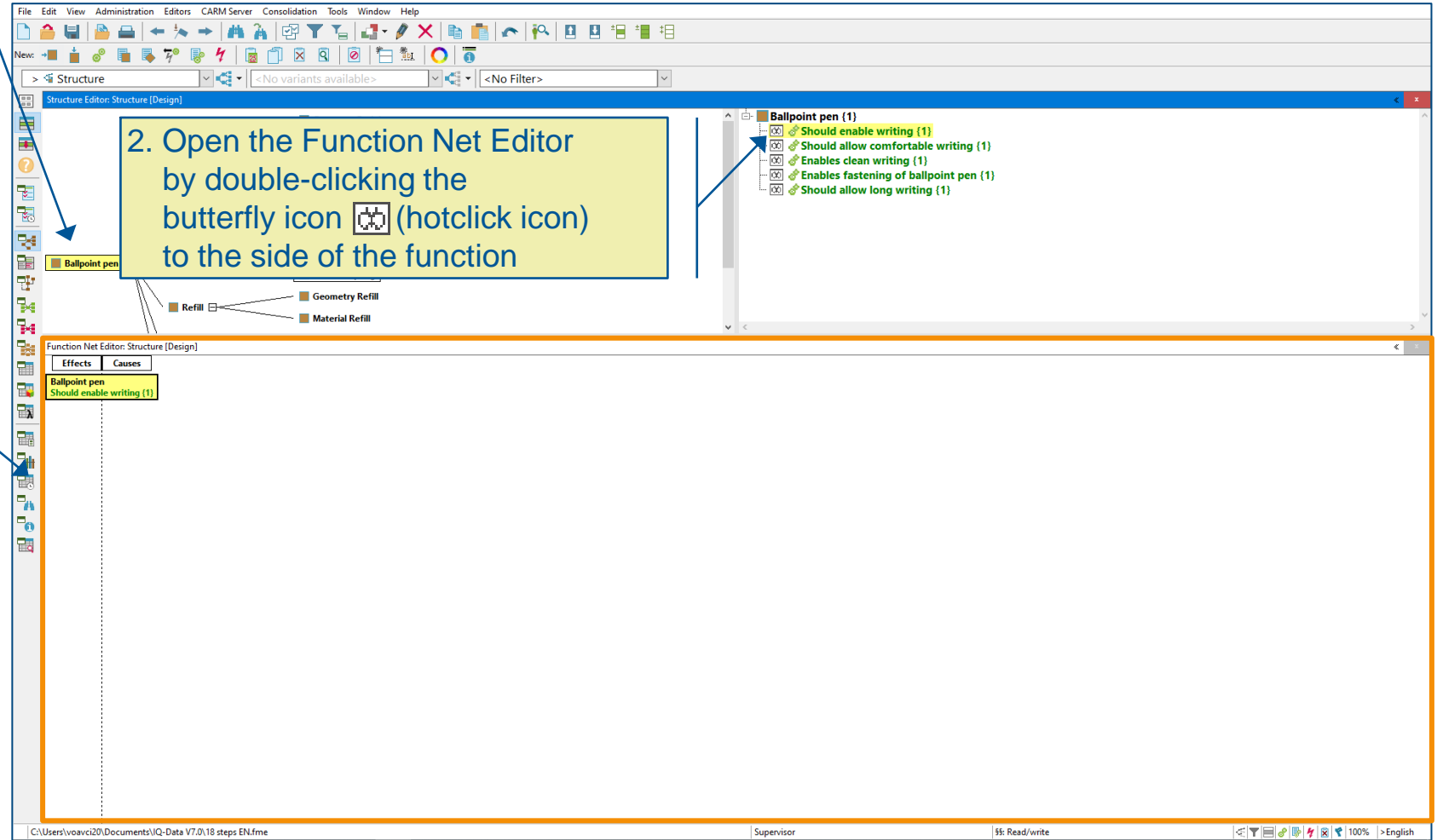


6. Establish function nets (1/2)

1. Select the root element

2. Open the Function Net Editor by double-clicking the butterfly icon (hotclick icon) to the side of the function

3. The Function Net Editor now opens in the second workspace



6. Establish function nets (2/2)

1. Select the desired subsequent system elements

The screenshot displays the APIS IQ software interface. The top window shows the 'Structure' tree with a hierarchy of components: 'Ballpoint pen' (parent) and 'Spring' (child). Under 'Spring', there are sub-elements like 'Geometry Spring', 'Material Spring', and 'Refill'. The bottom window shows the 'Function Net Editor' with a tree structure. The root node is 'Ballpoint pen' with the function 'Should enable writing (1)'. It branches into three 'Spring' nodes with functions: 'Should take up force (1)', 'Should give force (1)', and 'Should fit in shaft (1)'. Each 'Spring' node further branches into specific sub-functions: 'Should take up force' includes 'Length suitable', 'Diameter fitting', and 'Appropriate strength'; 'Should give force' includes 'Length suitable', 'Diameter fitting', and 'Appropriate spring rate'; 'Should fit in shaft' includes 'Length suitable' and 'Diameter fitting'. A callout box on the right side of the Function Net Editor contains the text '2. Select the appropriate functions' with an arrow pointing to the sub-functions under the 'Should fit in shaft' node.

2. Select the appropriate functions

3. Connect the selected function by Drag & Drop to the parent function in the Function Net Editor

Note:
How to link function nets automatically is explained from slide 34 onwards.

7. Determine failures (1/2)

3. Select **-Failures-** icon

The screenshot shows the APIS IQ software interface with a hierarchical tree structure of a ballpoint pen. The tree is organized as follows:

- Ballpoint pen
 - Push button
 - Geometry Clip
 - Material Clip
 - Clip
 - Geometry Shaft
 - Material Shaft
 - Shaft
 - Geometry Spring
 - Material Spring
 - Spring
 - Geometry Refill
 - Material Refill
 - Refill
 - Geometry Silicone handle
 - Material Silicone handle
 - Silicone handle
 - Geometry Ballpoint pen tip
 - Material Ballpoint pen tip
 - Ballpoint pen tip

Annotations on the screenshot:

- 1. Select system element**: Points to the 'Ballpoint pen' node in the tree.
- 2. Select function**: Points to the 'Should enable writing (1)' failure mode in the list.
- 3. Select -Failures- icon**: Points to the lightning bolt icon in the top toolbar.

The failure modes listed for 'Ballpoint pen (1)' are:

- Should enable writing (1)
- Should allow comfortable writing (1)
- Enables clean writing (1)
- Enables fastening of ballpoint pen (1)
- Should allow long writing (1)

7. Determine failures (2/2)

1. Enter the failures in the Input collector and confirm with **-Enter-**

2. If the input line is empty, press **-Enter-** one final time to finish the entry of the failures

The screenshot displays the APIS IQ software interface. On the left, a tree view shows the product structure, with 'Ballpoint pen' selected and expanded. The main workspace shows a 'Failures - Input collector with catalog' dialog box. The 'Input' tab is active, and the input field contains the text 'Does not allow writing'. The 'Catalog' tab is also visible. On the right, an 'Input collector' panel is open, showing options to 'Exit input collector', 'Exit without applying changes', or 'Apply changes and close input collector'. The status bar at the bottom indicates 'Should enable writing [1 Ballpoint pen]' and 'Match off 0'.

8. Establish failure nets (1/2)

1. Select a system element of the second-to-last level

2. Open the Failure Net Editor by double-clicking the butterfly icon to the side of the failure

3. The Failure Net Editor now opens in the second workspace

8. Establish failure nets (2/2)

1. Select the desired associated system elements

- Connected failures on the left represent the failure effects
- Connected failures on the right represent the failure causes

The screenshot displays the APIS IQ software interface. The top window is the 'Structure Editor: Structure [Design]', showing a hierarchical tree of components. The 'Ballpoint pen' component is expanded, showing sub-components like 'Push button', 'Clip', 'Shaft', 'Spring', 'Refill', 'Silicone handle', and 'Ballpoint pen tip'. The 'Spring' component is highlighted in yellow. The bottom window is the 'Failure Net Editor: Structure [Design]', which is divided into 'Effects' and 'Causes' columns. A central node labeled 'Spring' with the failure 'No absorption of force (1)' is highlighted. Arrows indicate the connection between the 'Spring' component in the Structure Editor and its corresponding failure in the Failure Net Editor. A third box on the right points to the list of failures associated with the 'Spring' component in the Structure Editor.

2. Select the appropriate failures

3. Connect the selected failures by Drag & Drop to the parent failure in the Failure Net Editor

9. Create a FMEA Form (1/2)

1. Select 2nd level system element

2. Right-click to open the context menu

The screenshot shows the 'Structure Editor: Structure [Design]' window. The tree view on the left shows a hierarchy of elements: Push button, Clip, Shaft, Ballpoint pen, Refill, Silicon, and Ballpoint. The 'Spring' element is selected, and its context menu is open. The menu items include: New, System elements..., Functions..., Product characteristics..., Process characteristics..., Safety Goals..., Create next structure level, Extract branch into new structure, Create structure interface file..., Properties..., Delete..., Copy, Paste, User-defined attributes..., Note..., Info..., Make Focus, CSS Modules, Sort, Filter, -> FMEA scope analysis, -> FMEA Form, -> AIAG/VDA-Form, -> AIAG/VDA-Form (MSR), -> Control Plan, -> Process Flow Diagram, -> Graph (butterfly partial view), Display options..., and Bookmark. The 'FMEA Form' option is highlighted. A dialog box titled 'IQ-RM PRO: Information' is shown, with a question mark icon and the text: 'A form for the selected elements is not available. Do you want to create a new form?'. There are 'Yes' and 'No' buttons, and a checkbox for 'Do not show this message again and remember user's choice'. The 'Yes' button is highlighted.

3. Select -FMEA Form-

4. Confirm with -Yes-

Note:
It is also possible to create a FMEA Form for all system elements for a specific level (multi-selection).

9. Create a FMEA Form (2/2)

- The form now opens in the second workspace

The screenshot shows the APIS IQ software interface. The top part displays a hierarchical tree structure for a 'Ballpoint pen' assembly, with 'Spring' selected. The right pane shows a list of functions for the Spring component, such as 'Should take up force (1)', 'No absorption of force (1)', 'Should give force (1)', 'No force output (1)', 'Should fit around mine (1)', 'Does not fit on mine (1)', 'Should fit in shaft (1)', and 'Does not fit in shaft (1)'. The bottom pane shows the FMEA table for the Spring component.

Effect	S	Spec. Characteristic	Failure mode	Cause	Preventive action	O	Detection action	D	RPN	AP	Notes AP	R/D
System element: Spring												
Function: Should take up force												
[Ballpoint pen] Does not allow comfortable writing			No absorption of force	[Geometry Spring] Length too long								
[Ballpoint pen] Does not allow clean writing				[Geometry Spring] Length too short								
[Ballpoint pen] Does not allow long writing				[Geometry Spring] Diameter too long								
				[Geometry Spring] Diameter too short								
				[Material Spring] Strength too low								
				[Material Spring] Strength too high								
				[Material Spring] Spring rate too low								
Function: Should give force												
			No force output									
Function: Should fit around mine												
			Does not fit on mine									
Function: Should fit in shaft												
			Does not fit in shaft									

10. Set the severity rating of the failure effect

1. Right-click on selected cell to open the context menu

2. Select **-Severity-**

3. Select the severity rating from catalog

4. Confirm with **-OK-**

The screenshot shows the APIS IQ software interface. In the background, the 'Structure Editor' shows a tree view with 'Spring' selected. A context menu is open over the 'Spring' cell, with 'Severity...' highlighted. A dialog box titled 'Failure: Does not allow comfortable writing' is open, showing a severity rating of 4 (medium) selected from a catalog. The dialog also shows a description of the failure effect and options for valuating instances.

11. Enter preventive action

- Type preventive action directly into the cell and confirm with *-Enter-*

The screenshot shows the APIS IQ software interface. At the top, there is a menu bar (File, Edit, View, Administration, Editors, CARM Server, Consolidation, Tools, Window, Help) and a toolbar. Below the toolbar, the 'Structure Editor: Structure [Design]' window displays a hierarchical tree of components. The 'Ballpoint pen' component is expanded, showing sub-components like 'Push button', 'Clip', 'Shaft', 'Spring', 'Refill', 'Silicone handle', and 'Ballpoint pen tip'. Each sub-component has its own 'Geometry' and 'Material' options. The 'Spring' component is highlighted in yellow.

On the right side, the 'Spring (1)' component is expanded, showing a list of failure modes with associated icons and counts, such as 'Should take up force (1)', 'No absorption of force (1)', 'Should give force (1)', 'No force output (1)', 'Should fit around mine (1)', 'Does not fit on mine (1)', 'Should fit in shaft (1)', and 'Does not fit in shaft (1)'. Some of these are marked with a red lightning bolt icon.

At the bottom, the 'FMEA Forms Editor VDA 2019 (AIAG/VDA): Spring (Structure [Design])' window is open, displaying an FMEA table. The table has columns for 'Spec. Characteristic', 'Failure mode', 'Cause', 'Preventive action', 'Detection action', 'D', 'RPN', 'AP', 'Notes AP', and 'R/D'. The 'Preventive action' column for the first row is highlighted with an orange box and contains the text 'Design based on experience'. A blue arrow points from the text in the slide to this cell.

Spec. Characteristic	Failure mode	Cause	Preventive action	Detection action	D	RPN	AP	Notes AP	R/D
Spec. Characteristic	Failure mode	Cause	Preventive action	Detection action	D	RPN	AP	Notes AP	R/D
			Design based on experience						

Note:
The action entered can be displayed in the structure list via *-Window | Synchronize into upper workspace-*

12. Set the occurrence rating

2. Select -Occurrence-

3. Select the occurrence rating from catalog

1. Right-click on selected cell to open the context menu

4. Confirm with -OK-

Structure Editor: Structure [Design]

Ballpoint pen

Spring

Push button

Clip

Shaft

Refill

Note

Valuation

Severity

Occurrence

Detection

Translation language: English

Occurrence (O)

10 high

9 high

8 medium

7 medium

6 small

5 small

4 small

3 very small

2 very small

1 improbable

No rating

This valuation is used in different positions

Valuate only this instance

Valuate all instances

Valuate selected instances

Function: Should take up force

[Ballpoint pen]	Does not allow comfortable writing	4	
[Ballpoint pen]	Does not allow clean writing	7	
[Ballpoint pen]	Does not allow long writing	3	

Function: Should fit around mine

OK Cancel Help

Opens a dialog to modify the occurrence rating of the selected object

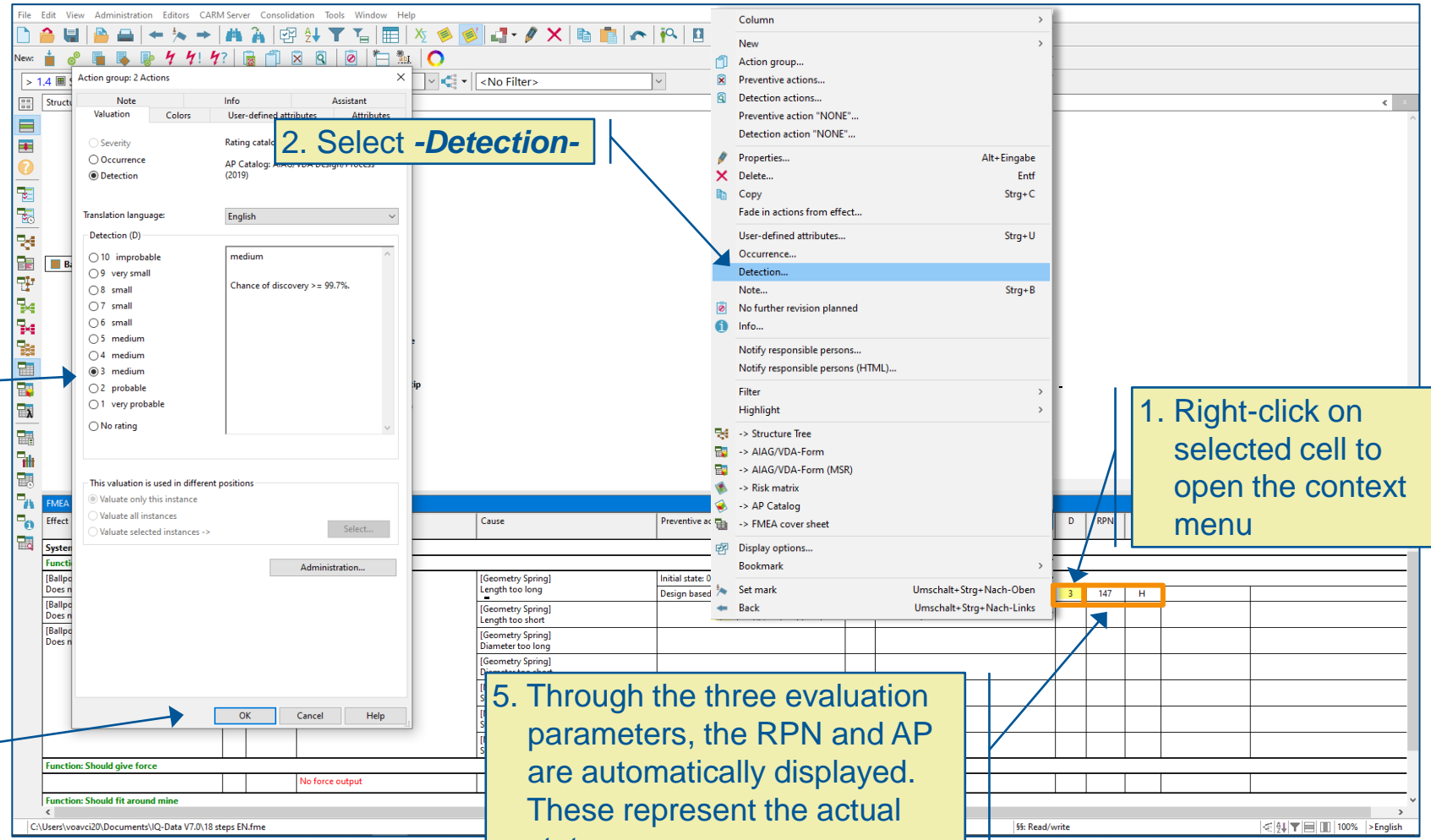
13. Enter detection action

- Type detection action directly into the cell and confirm with **-Enter-**

The screenshot shows the APIS IQ software interface. On the left, a tree view shows the structure of a 'Ballpoint pen' assembly, with 'Spring' highlighted. On the right, a detailed view of 'Spring (1)' shows various failure modes like 'Should take up force (1)', 'No absorption of force (1)', etc. At the bottom, an FMEA table is displayed. The table has columns for Effect, Spec. Characteristic, Failure mode, Cause, Preventive action, Detection action, D, RPN, AP, Notes AP, and R/D. The 'Detection action' column for the 'No absorption of force' failure mode contains the text 'Assembly test', which is highlighted with an orange box. A blue arrow points from the text in the slide to this box.

Effect	5	Spec. Characteristic	Failure mode	Cause	Preventive action	0	Detection action	D	RPN	AP	Notes AP	R/D
System element: Spring												
Function: Should take up force												
[Ballpoint pen] Does not allow comfortable writing	4		No absorption of force	[Geometry Spring] Length too long	Initial state: 02.11.2021		7	Assembly test				
[Ballpoint pen] Does not allow clean writing	7			[Geometry Spring] Length too short	Design based on experience							
[Ballpoint pen] Does not allow long writing	3			[Geometry Spring] Diameter too long								
				[Geometry Spring] Diameter too short								
				[Material Spring] Strength too low								
				[Material Spring] Strength too high								
				[Material Spring] Spring rate too low								
Function: Should give force												
			No force output									

14. Set the detection rating



3. Select the detection rating from catalog

4. Confirm with **-OK-**

2. Select **-Detection-**

1. Right-click on selected cell to open the context menu

5. Through the three evaluation parameters, the RPN and AP are automatically displayed. These represent the actual state

15. Optimize actual state (1/2)

- By introducing new preventive and/or detection actions, the actual state can be improved

2. Select -Revision state-

1. Right click on -Initial state- to open the context menu

Item	Spec. Characteristic	Failure mode	Cause	Preventive action
Item: Should take up force				
joint pen) not allow comfortable writing	4	No absorption of force	[Geometry Spring] Length too long	Initial state: 02.11.2021
joint pen) not allow clean writing	7		[Geometry Spring] Length too short	Design based on experience
joint pen) not allow long writing	3		[Geometry Spring] Diameter too long	
			[Geometry Spring] Diameter too short	
			[Material Spring] Strength too low	
			[Material Spring] Strength too high	
			[Material Spring] Spring rate too low	
Item: Should give force				
		No force output		
Item: Should fit around mine				

15. Optimize actual state (2/2)

1. Enter the optimized preventive action and/or detection action and assign a new O/D rating

2. This is a forecast condition. This can be recognized by the round brackets

Effect	S	Spec. Characteristic	Failure mode	Cause	Preventive action	O	Detection action	D	RPN	AP	Notes AP	R/D
System element: Spring												
Function: Should take up force												
[Ballpoint pen] Does not allow comfortable writing	4		No absorption of force	[Geometry Spring] Length too long	Initial state: 02.11.2021 Design based on experience	7	Assembly test	3	147	H		
[Ballpoint pen] Does not allow clean writing	7				Revision state: 02.11.2021 Design based on simulation	(3)		3	(63)	(L)		Responsible? Deadline? in progress
[Ballpoint pen] Does not allow long writing	3											
				[Geometry Spring] Length too short								
				[Geometry Spring] Diameter too long								
				[Geometry Spring] Diameter too short								
				[Material Spring] Strength too low								
				[Material Spring] Strength too high								
				[Material Spring]								

16. Determine responsible persons, status and deadline

- If the optimized action is completed, double-click the responsible person on the left and switch the tab to **-Deadline-** and change the state of your action

2. Select a responsible person

3. Switch to the *-Deadline-* tab and select the status and deadline for optimized action

4. Confirm with *-OK-*

1. Open the dialog by double-clicking on *-Responsible?-*

The screenshot shows the 'Action group: 1 Action' dialog box with the following details:

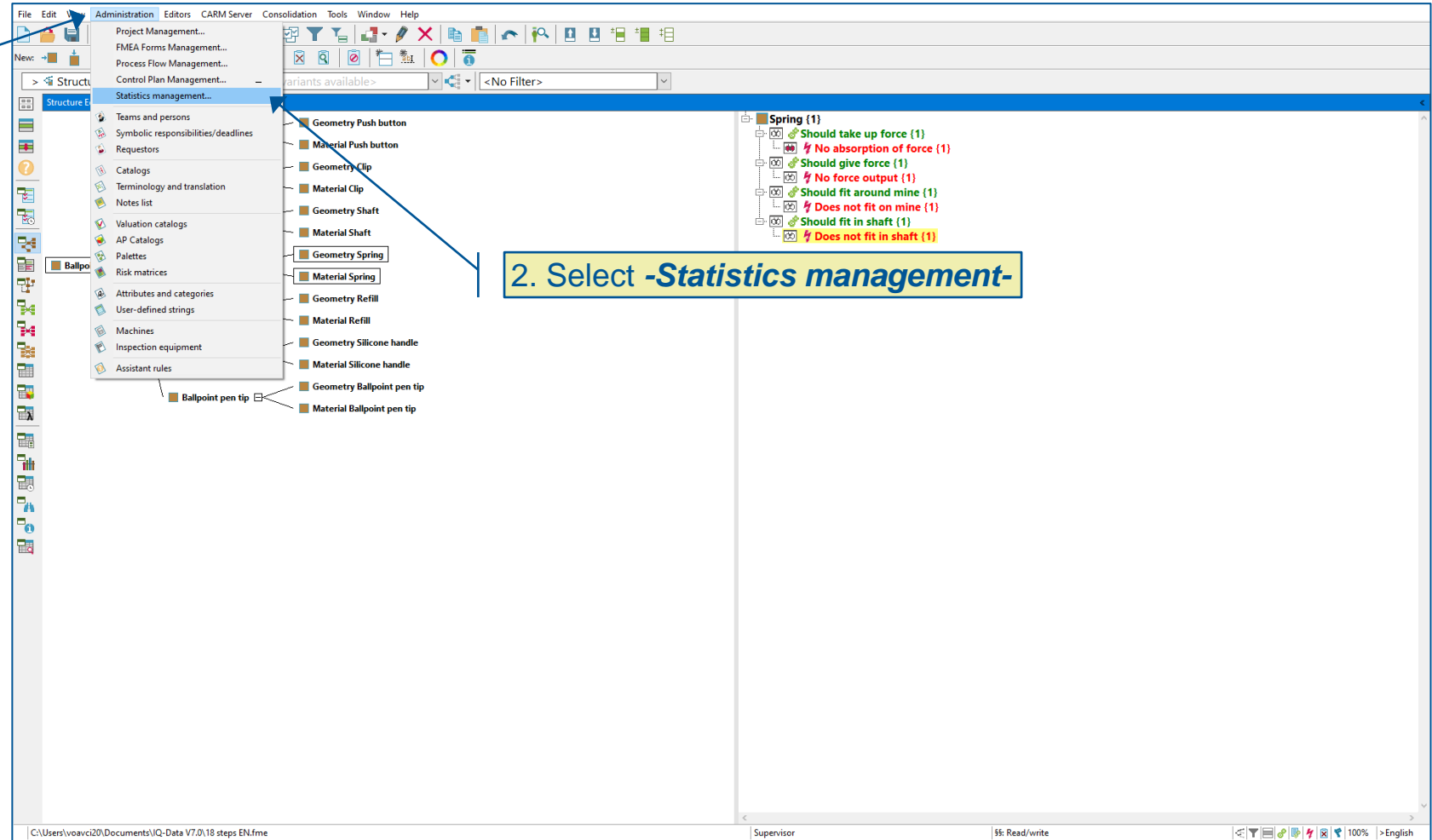
- Deadline:** 05.11.2021
- Status:** in progress
- Degree of progress:** 20%
- Description (English):** Normal
- Notification by e-mail:** Responsible was not yet notified by e-mail. Attention: There is no e-mail address defined for the person 'Supervisor'. Therefore it is not possible to send any notification to that person.

The background shows the 'Structure Editor' with a tree view containing items like 'Push button', 'Ballpoint', 'Refill', 'Silicone handle', and 'Ballpoint pen tip'. A table at the bottom left lists failure modes for a 'Spring' element.

Failure mode	Spec. Characteristic	Failure mode
joint pen)	4	No absorption of force
not allow comfortable writing		
joint pen)	7	
not allow clean writing		
joint pen)	3	
not allow long writing		

17. Evaluation (1/3)

1. Click on **-Administration-**



17. Evaluation (2/3)

The screenshot shows the APIS IQ software interface. On the left, a tree view displays a hierarchical structure of components. A yellow box labeled '1. Select Analysis scope' points to the 'Spring' component. A yellow box labeled '2. Select Analysis type (e.g. Frequency analysis AP)' points to the 'Frequency analysis AP' option in the 'Statistics management...' dialog. A yellow box labeled '3. Select Analysis scheme (e.g. Last revision state)' points to the 'Frequency analysis AP "Last revision state"' option in the 'Analysis scheme' list. A yellow box labeled '4. Select the structure or form to be analyzed' points to the '[(1) FMEA Form: Spring]' option in the 'Data selection' tree. A yellow box labeled '5. Confirm with -Open-' points to the 'Open' button in the dialog.

1. Select Analysis scope

2. Select Analysis type (e.g. Frequency analysis AP)

3. Select Analysis scheme (e.g. Last revision state)

4. Select the structure or form to be analyzed

5. Confirm with -Open-

17. Evaluation (3/3)

- Frequency analysis AP (shown here)

1. The upper part of the Statistics Editor shows the diagram

2. The lower part contains the results list of the diagram

The screenshot displays the APIS software interface. The top section, titled 'Statistics Editor: Frequency analysis AP', contains a horizontal bar chart. The x-axis is labeled 'Action Priority (AP)' and ranges from 'High' to 'Low'. The y-axis is labeled 'Frequency' and ranges from 0 to 2. The chart shows three bars: a red bar at 'High' with a frequency of 2, a yellow bar at a medium level with a frequency of 1, and a green bar at 'Low' with a frequency of 1.

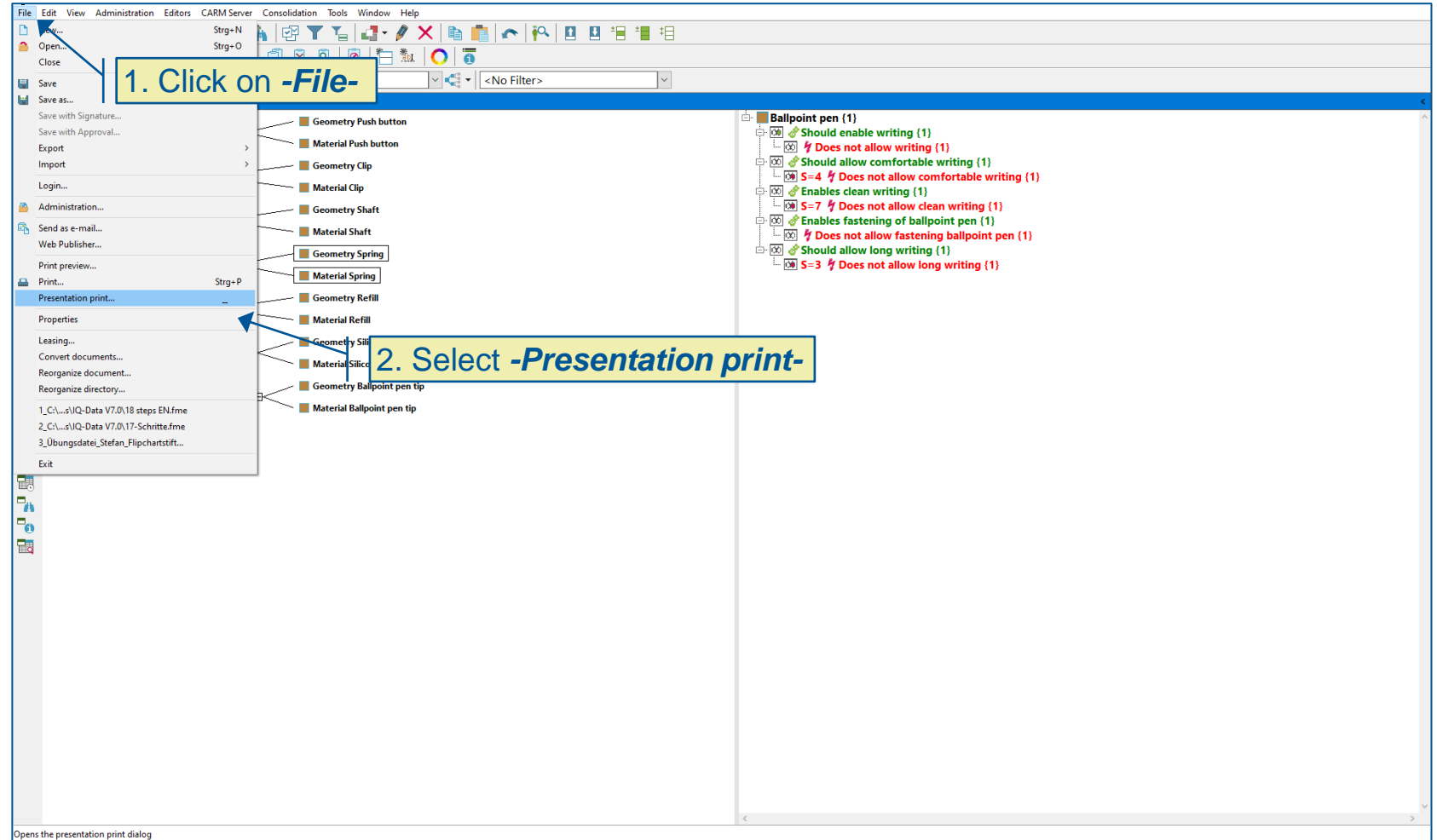
The bottom section is a table with the following data:

Category	Number	FMEA Form	System element	Function	Failure	Failure effects	Cause	RPN	S	O	D	Preventive action	Detection action
APIS Informationstechnologien GmbH Frequency analysis AP FMEA Form Spring 02.11.2021													
High	2	Spring	Spring	Should take up force	No absorption of force	Does not allow comfortable writing Does not allow clean writing Does not allow long writing	Length too short	147	7	7	3	Design based on experience	Assembly test
		Spring	Spring	Should take up force	No absorption of force	Does not allow comfortable writing Does not allow clean writing Does not allow long writing	Diameter too short	420	7	6	10	Design based on experience	none
Medium	1	Spring	Spring	Should take up force	No absorption of force	Does not allow comfortable writing Does not allow clean writing	Diameter too long	(84)	7	4	3	Design based on simulation	

At the bottom of the window, the file path is shown as 'C:\Users\voavci20\Documents\IQ-Data V7.0\18 steps EN.fme' and the user is identified as 'Supervisor'. The status bar also shows 'AP', 'n: 3', 'min: 1', 'Avg: 1,7', 'max: 2', '100%', and '>English'.

18. Data output via Presentation print in PDF format (1/3)

- If a document needs to be exported, Presentation print can be used



18. Data output via Presentation print in PDF format (2/3)

1. Click on **-New-**

2. Select a Name

3. Confirm with **-OK-**

18. Data output via Presentation print in PDF format (3/3)

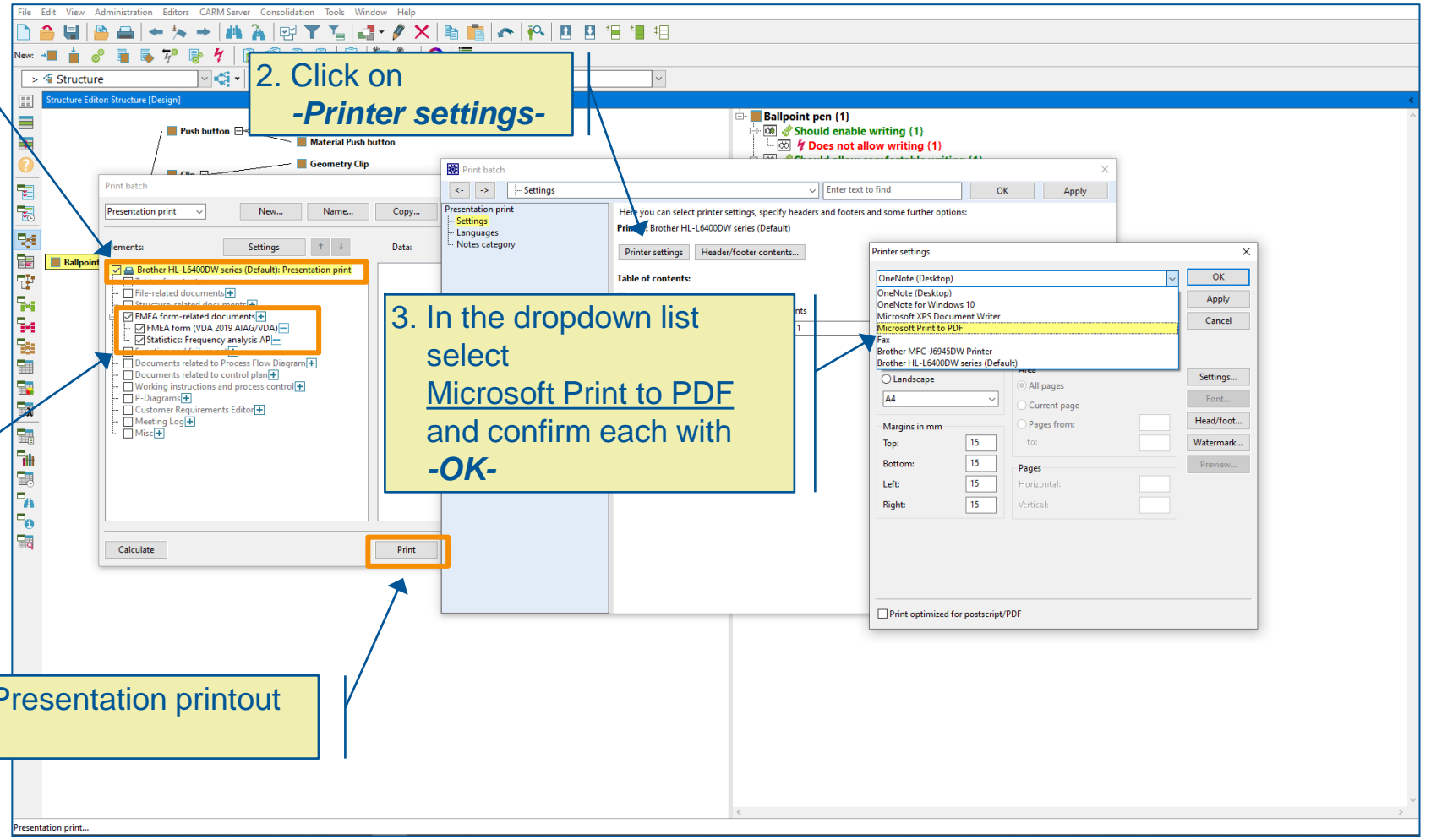
1. Double-click on the predefined printer

2. Click on **-Printer settings-**

3. In the dropdown list select **Microsoft Print to PDF** and confirm each with **-OK-**

4. Select and activate desired components for Presentation print

5. Create the Presentation printout with **-Print-**



In the following, further points are shown that support the new standard according to AIAG-VDA 2019 or enable the efficient creation of an FMEA.



- Automatic creation of function net
- Integration and application of the new AIAG/VDA form

Automatic creation of function nets

3. Click on *-Tools-*

4. Select *-Create function nets [database]-*

1. Open the Failure Net Editor for any failure

2. Click in the second workspace to make the Failure Net Editor the active workspace

Failure Net Editor: Structure [Design]

- Ballpoint pen
 - Does not allow comfortable writing (1)
 - Does not allow clean writing (1)
 - Does not allow long writing (1)
- Spring
 - No absorption of force (1)
- Geometry Spring
 - Length too long (1)
 - Length too short (1)
 - Diameter too long (1)
 - Diameter too short (1)
- Material Spring
 - Strength too low (1)
 - Strength too high (1)
 - Spring rate too low (1)

Creates function nets for all functions of the database based on the failure nets of the database

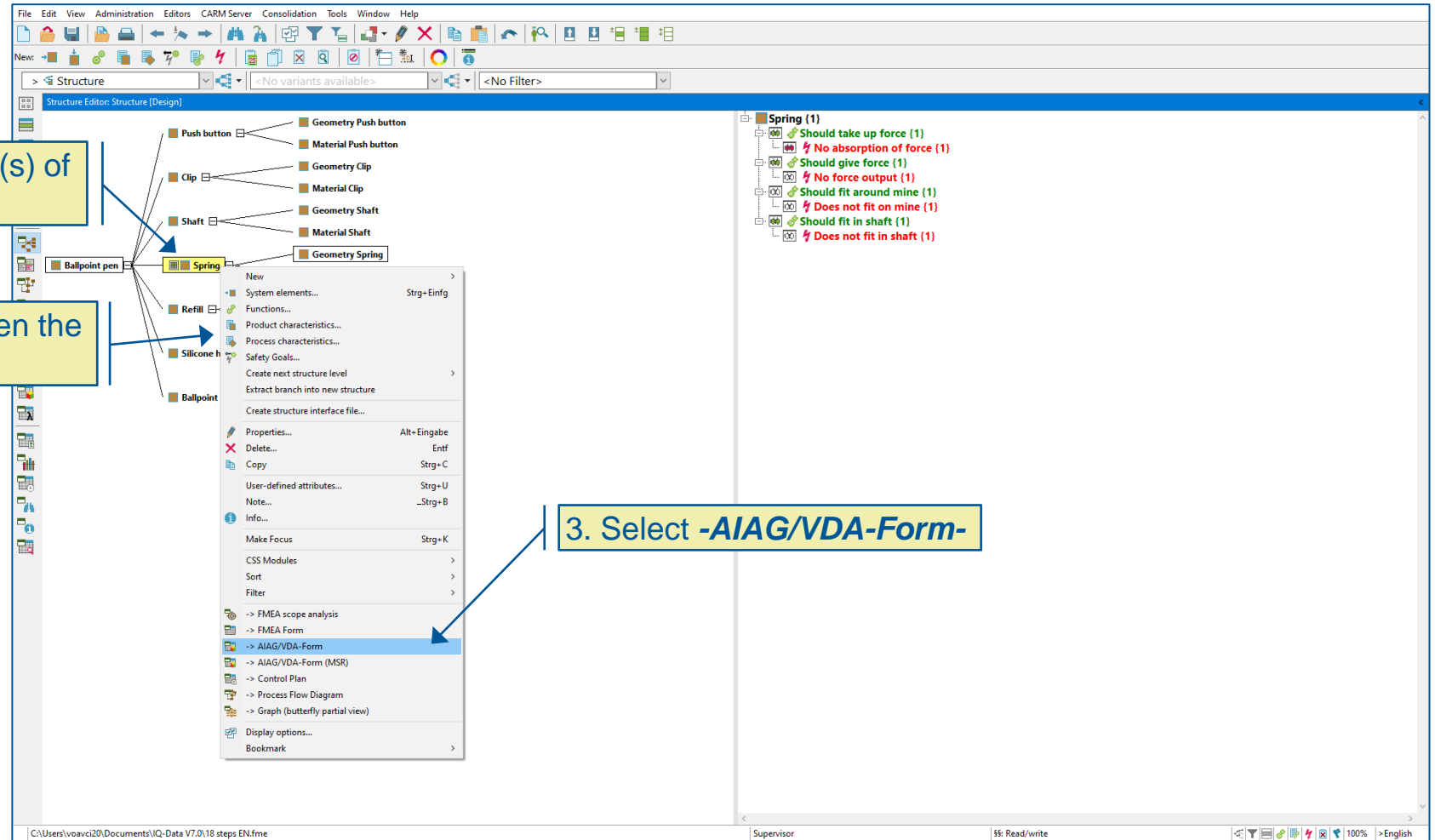
Note:
The automatic creation of function nets is only expedient if the corresponding failure nets have been completely established.

AIAG/VDA-Form 2019 (1/3)

1. Select system element(s) of the second last level

2. Right click to open the context menu

3. Select -AIAG/VDA-Form-



AIAG/VDA-Form 2019 (2/3)

1. Select the desired option

Please select

If you click on an option, you will see an explanation

- Open new temporary view.
- Create new FMEA formsheet
- Open existing FMEA-formsheet

2. Confirm with -OK-

The existing formsheet is opened:

- Spring

AIAG/VDA Forms Editor

STRUCTURE ANALYSIS (STEP 2)			FUNCTION ANALYSIS (STEP 3)			FAILURE ANALYSIS (STEP 4)			RISK ANALYSIS (STEP 5)				DFMEA Preventive Action	DFMEA Detection Action	Responsible Person's Name	Target Condition		
1. Next Higher Level	2. Focus Element	3. Next Lower Level or Characteristic Type	1. Next Higher Level Function and Requirement	2. Focus Element Function and Requirement	3. Next Lower Level Function and Requirement or Characteristic	1. Failure Effects (FE) to the Next Higher Level Element and/or End User	S	2. Failure Mode (FM) of the Focus Element	3. Failure Cause (FC) of the Next Lower Element or Characteristic	Current Prevention Control (PC) of FC	O	Current Detection Controls (DC) of FC or FM	D	AP	DFMEA Preventive Action	DFMEA Detection Action	Responsible Person's Name	Target Condition
System element	System element	System element	Function	Function	Function	Effect	Severit	Failure	Cause	Preventive action NONE	Occurrence	Detection action NONE	Detect on	Action Priority (AP)	Preventive action NONE	Detection action NONE	Responsible	Deadline
No further revision planned																		

Opening AIAG/VDA Forms Editor...

AIAG/VDA-Form 2019 (3/3)

- AIAG/VDA-Form (shown here)

The screenshot displays a software interface for structure editing. On the left, a tree view shows the hierarchy of components for a 'Ballpoint pen', including 'Push button', 'Clip', 'Shaft', 'Spring', and 'Refill'. Each component is further divided into 'Geometry' and 'Material' sub-categories. On the right, a detailed view of the 'Spring (1)' component shows a list of requirements, such as 'Should take up force (1)', 'No absorption of force (1)', 'Should give force (1)', 'No force output (1)', 'Should fit around mine (1)', 'Does not fit on mine (1)', 'Should fit in shaft (1)', and 'Does not fit in shaft (1)'. Below these views is the AIAG/VDA Form table, which is divided into four main sections: Structure Analysis (Step 2), Function Analysis (Step 3), Failure Analysis (Step 4), and Risk Analysis (Step 5).

STRUCTURE ANALYSIS (STEP 2)			FUNCTION ANALYSIS (STEP 3)			FAILURE ANALYSIS (STEP 4)			RISK ANALYSIS (STEP 5)									
1. Next Higher Level	2. Focus Element	3. Next Lower Level or Characteristic Type	1. Next Higher Level Function and Requirement	2. Focus Element Function and Requirement	3. Next Lower Level Function and Requirement or Characteristic	1. Failure Effects (FE) to the Next Higher Level Element and/or End User	S	SC	2. Failure Mode (FM) of the Focus Element	3. Failure Cause (FC) of the Next Lower Element or Characteristic	Current Prevention Control (PC) of FC	O	Current Detection Controls (DC) of FC or FM	D	AP	DFMEA Preventive Action	DFMEA Detection Action	Responsible Person's Name
Ballpoint pen (1)	Spring (1)	Geometry Spring (1) Material Spring (1)	Should enable writing (1)	Should take up force (1)	Length suitable (1) Diameter fitting (1) Appropriate strength (1) Appropriate spring rate (1)	Does not allow comfortable writing (1) Does not allow clean writing (1) Does not allow long writing (1)		Classifications	No absorption of force (1)	Length too long (1) Length too short (1) Diameter too long (1) Diameter too short (1) Strength too low (1) Strength too high (1)	Initial state: 02.11.2021 Design based on experience (5)		Assembly test (4)		H	Revision state: 02.11.2021 Design based on simulation (1)	Detection action NONE	Supervisor
											Initial state: 02.11.2021 Design based on experience (5)		Assembly test (4)		H		Detection action NONE	Responsible
											Initial state: 02.11.2021 Design based on experience (5)		Assembly test (4)		H		Detection action NONE	Responsible
											Initial state: 02.11.2021 Design based on experience (5)		none (1)		H		Detection action NONE	Responsible
											Initial state: 02.11.2021 Design based on experience (5)		Assembly test (4)		L		Detection action NONE	Responsible
											Preventive action NONE	Occurrence NONE	Detection action NONE	Detect on NONE	Action Priority (AP) NONE		Detection action NONE	Responsible

This script is based on a document for the introduction to the APIS® IQ-Software by Dr.-Ing. Alexander Schloske (Fraunhofer IPA). The revision was made for Version 7.0 of the APIS® IQ-Software and methodical adjustments as described in the FMEA Handbuch AIAG-VDA 2019 (FMEA Handbook AIAG-VDA 2019).

We would like to thank Dr.-Ing. Alexander Schloske.

You have now gained a small insight into the many functions and possibilities of the APIS® IQ-Software.

Do you have any questions about further functionalities, products or services?

Our sales team is looking forward to hearing from you.

sales@apis.de