Productivity Tools
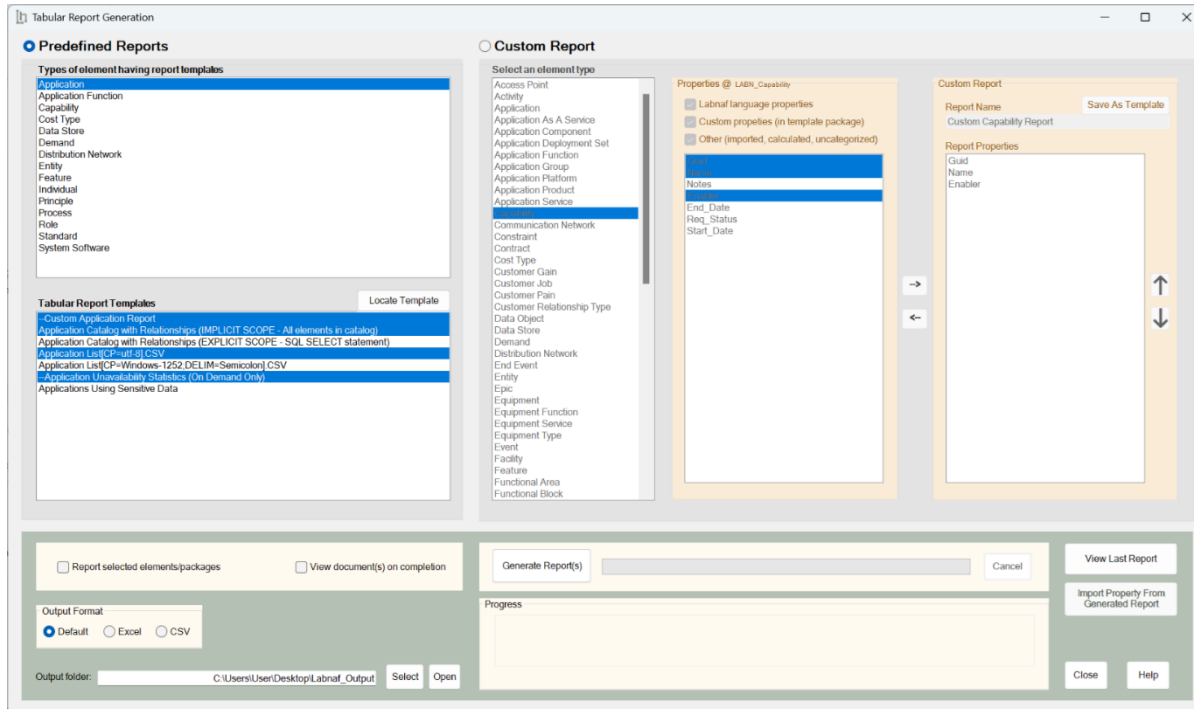
Tabular Report Generation

A. Generating Tabular Reports

B. Creating Tabular Report Templates

1. Scenarios for Starting a New Tabular Report Template

    a. Custom Report

    b. Clone & Edit

    c. Model the Structure

2. Collection of Elements to be Reported (scope)

3. Reported Element Properties

4. Reported Connections

5. Report Format

6. Summary

Generated Tabular Reports can be Excel or CSV

Properties

Relationships

Scheduled or On demand

Reports generation can be performed…
either **On Demand**   or   **Scheduled Periodically**

You can use predefined templates, or create custom reports that you can save as templates

Labnaf PowerShell Command: **GenerateTabularReports**

Usage : LNPS GenerateTabularReports [arguments]

Arguments:

- **SourceRepoPathName**
- **OutputDirectoryPath**
- **[ElementPrototype]**
- **[TabularReportTemplateName]**

To generate a CSV, add a '.CSV' extension to the tabular report template name.
The name of the CSV file can also define the CSV character encoding and column delimiter. For further information, see 'Inbound/Outbound Content Formatting' on the Guidance Web Site

Scheduling
You can use either the built-in Labnaf scheduler, or the Windows task scheduler, or your own scheduler.
If you want a report to be ignored by the Labnaf PowerShell, then add the prefix "--" to its template name. The report can then be generated only on demand/ using the user interface.

Using Predefined Report Templates

Select the Templates

- Select an element type that has defined report templates

- Select tabular report templates

## Select the Output Location and Format

- Select an output folder (typically only once).

- Select an output format (Excel or CSV) i.e. not necessarily using the format defined by the templates.

Define the Scope

Options for defining a selection of elements (scope) to be reported

- Elements or packages selected in the project browser or in the active diagram

- Elements and packages present in a "scope" diagram that belongs to the template

- Elements selected by a SQL select defined in the template note

- All elements in the catalog (default)

If multiple scopes have been defined, then the above sequence corresponds to priorities
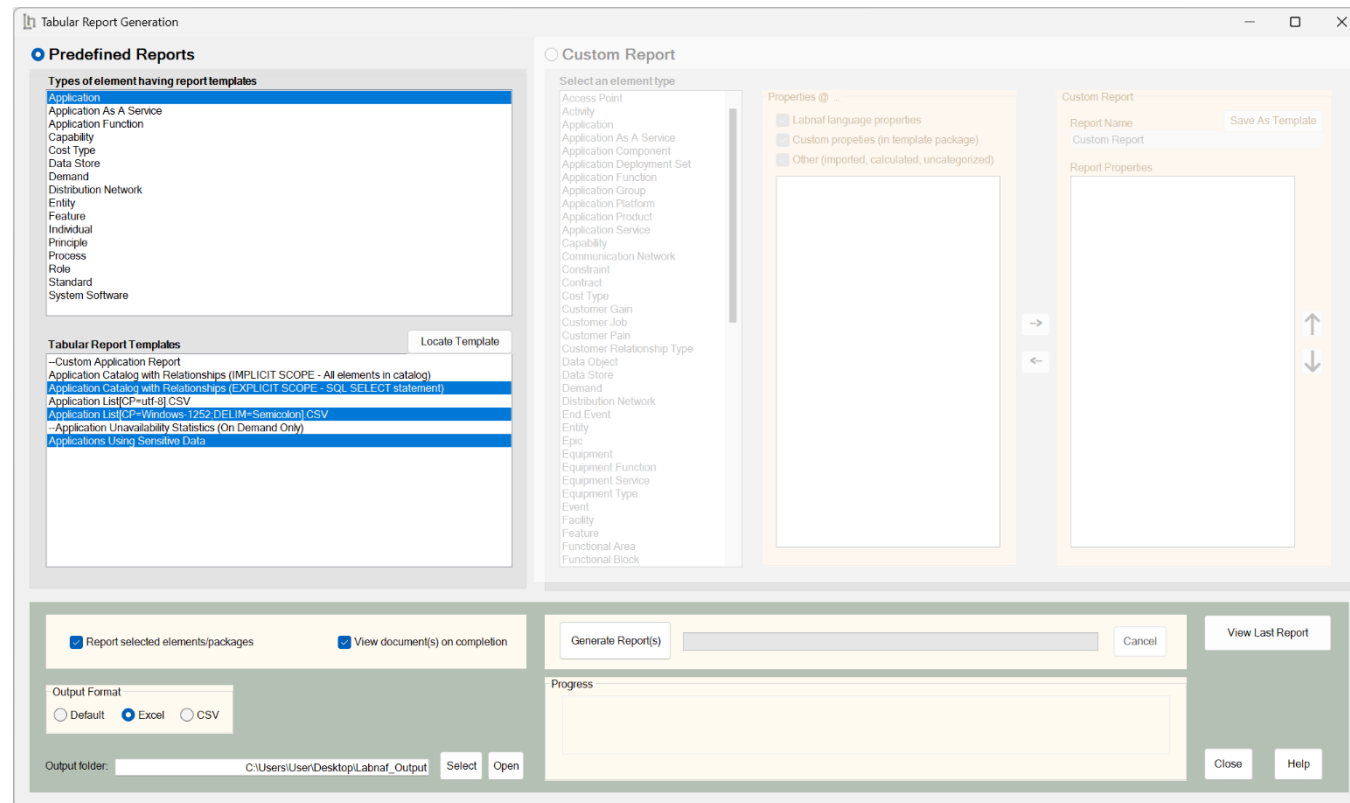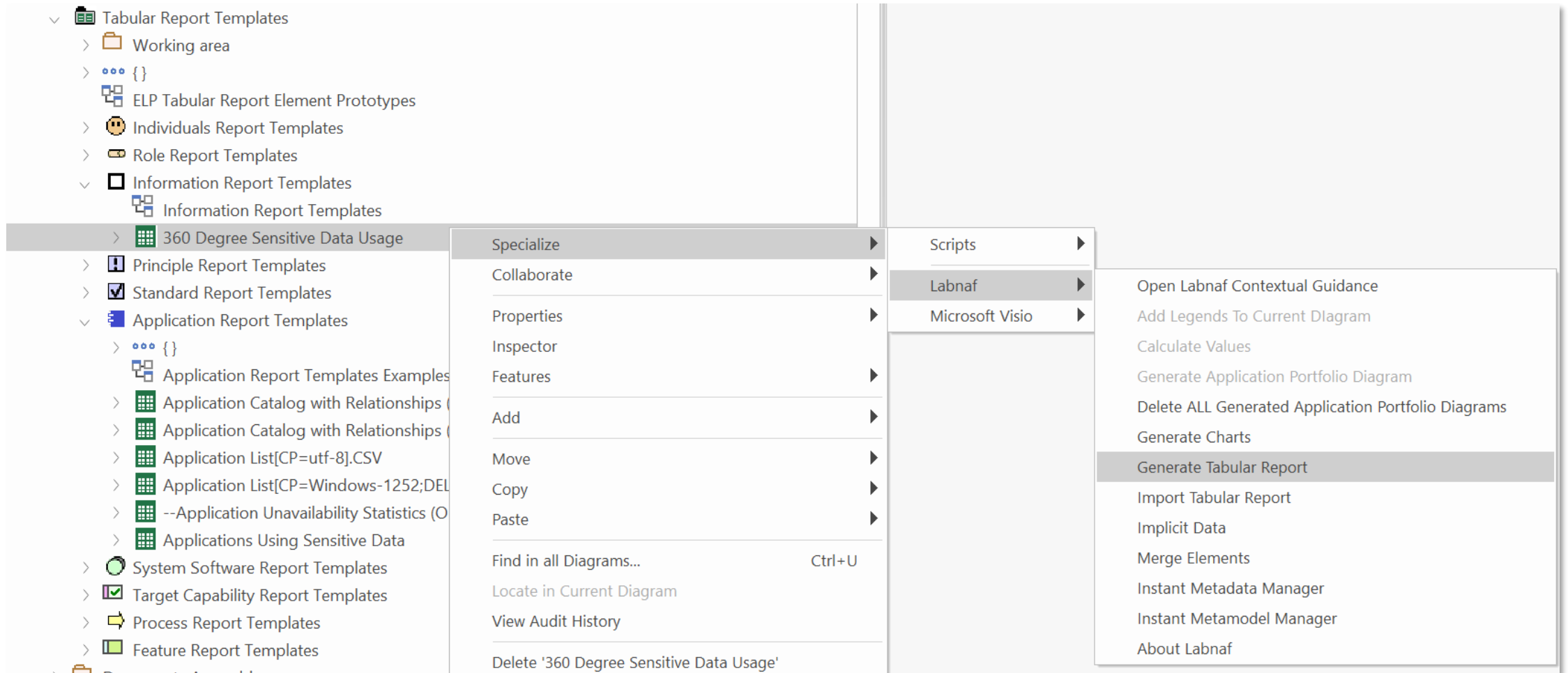
Generate Report(s)

- Generate reports from the selected templates.

- View the generated reports, or just the last one.

- Open the output folder to see all of generated reports.

- Open the "Log" folder that is located just underneath.

- Locate a selected template in the repository in case you want to make some changes, or if you want to clone and adapt it.

Using Predefined Report Templates (cont.)

You can also generate a report by selecting a template from the project browser or from a diagram

Generating Custom Reports

Define the Custom Report Content

- Select an element type

- Select properties

- Easily reorder properties

Select the Output Location and Format

- Select an output folder (typically only once).

- Select an output format (Excel or CSV) i.e. not necessarily using the format defined by the templates.

Define the Scope

Define a selection of elements (scope) to be generated (the sequence below corresponds to priorities)

- for elements or packages selected in the project browser (if any),

- or for elements or packages selected in the active diagram (if any),

- or for the entire catalog (default).
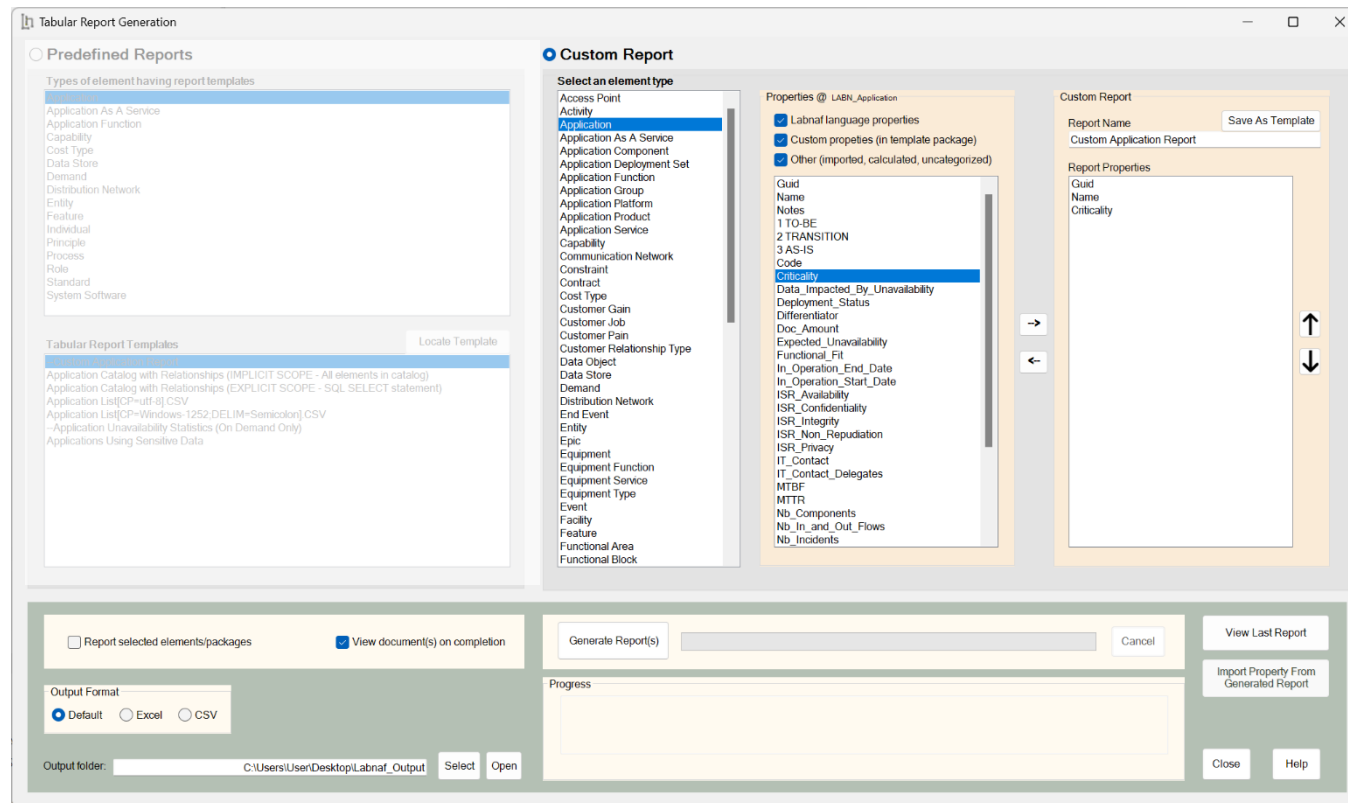
Generate, Edit, Import the Custom Report

- Generate and open Excel or CSV, edit values, and import the updates values on the fly if you wish.

- Save the custom report as a template

- Locate and edit the template content and colors, or change the scope of elements to be processed

- Open the output folder to see all the generated reports.

- Open the "Log" folder that is located just underneath.

- Locate a selected template in the repository in case you want to make some changes, or if you want to clone and adapt it.

Scheduling Tabular Reports Generation

See the
Labnaf PowerShell
documentation

https://www.labnaf.one/EndUserMaterial/Labnaf_PowerShell/

A. Generating Tabular Reports

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6. Summary

We will use the creation of an

Application Report Template

as an example

Predefined Report Templates: What can be configured?

Report **Format**: Excel or CSV (including character set and delimiters)

Grouping

Group Coloring

Group Name

Optional **column Rename**

Connection Group Name

Automatic connection **consolidation** into parent element relationships

Element **Properties** and/or **Tagged Values** (any sequence)

Optional **automatic cell coloring** following value

Filtering automatically set

Specific **connection type** in specific **direction** to **connected element type(s)**

Scope: Rule of any complexity for selecting the **collection of elements** to be reported (e.g. applications)

Scope(s): Where to find the hierarchy(ies) of **connected elements.** Types can be same or different at each level in the hierarchy

Type of Element to be Reported

Connections Specification

A. Generating Tabular Reports

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3 alternative scenarios for
Starting a New
Tabular Report Template

Custom Report	Save a custom report as a template
Clone & Edit	Clone and adapt an existing template
Model the Structure	Model the tabular report structure

Then complete/adapt the report template…
- Select the collection of elements to be reported (default = entire catalog)
- Define the properties to be reported
- Define the connections/relationships to be reported

A. Generating Tabular Reports

B. Creating Tabular Report Templates

1. Scenarios for Starting a New Tabular Report Template

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Creating a Template using the « Custom Reports » option

1. Create a custom report as described earlier in « **Generating Custom Reports** » in the present document.

2. Name the report and click « Save as Template »

3. Locate and edit the template content and colors, or change the scope of elements to be processed as described further in the present document
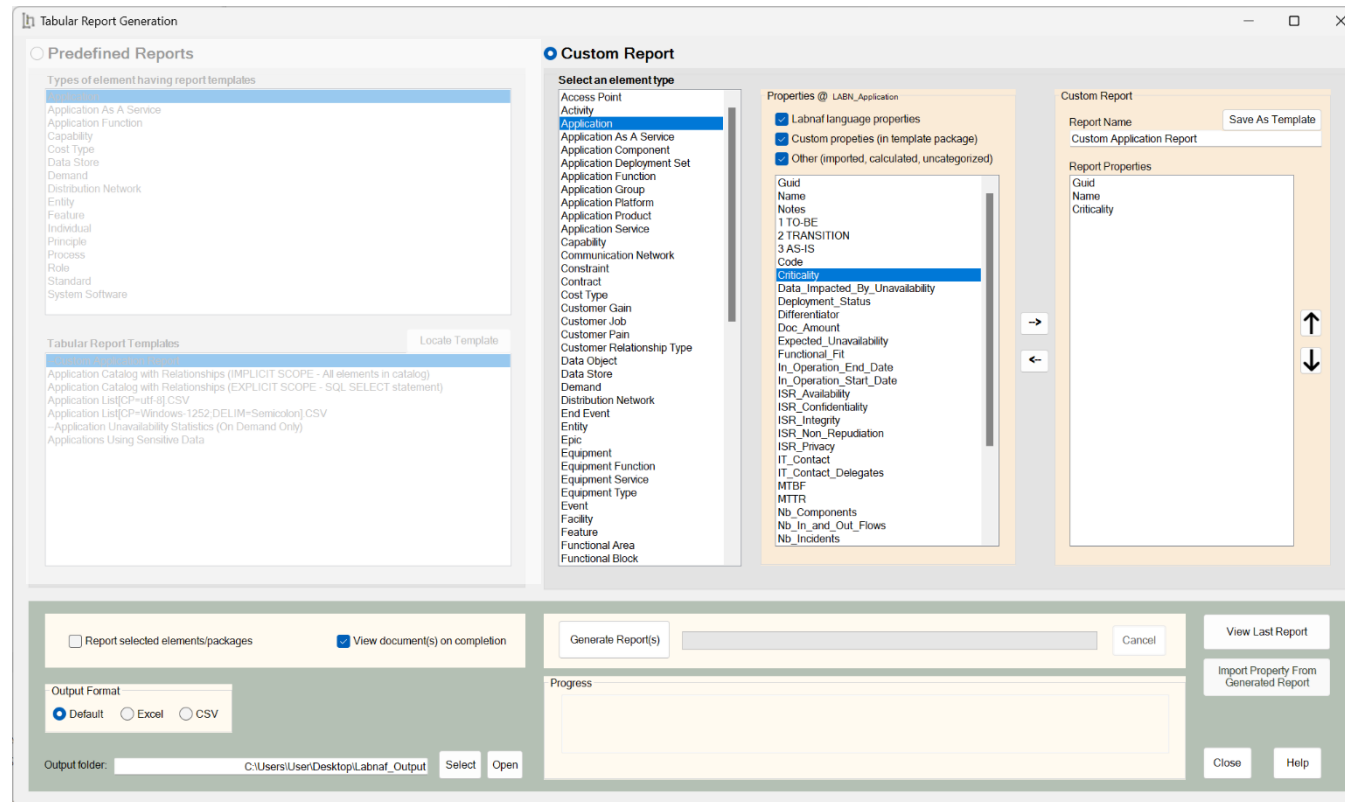
A. Generating Tabular Reports
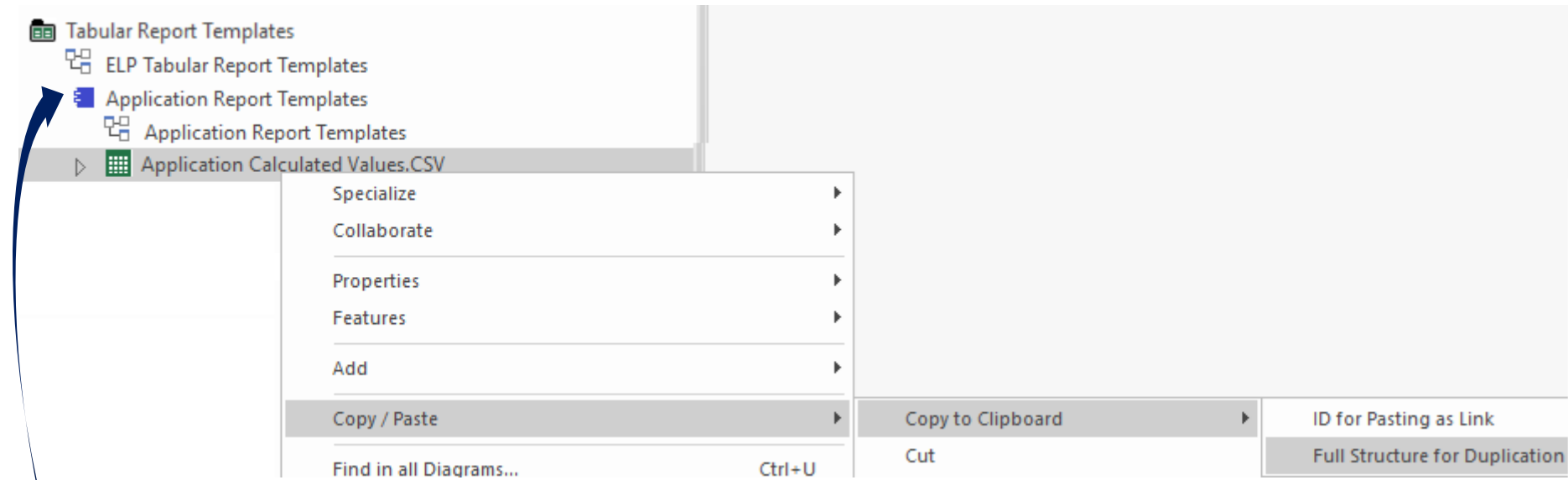
B. Creating Tabular Report Templates

1. Scenarios for Starting a New Tabular Report Template

    a. Custom Report

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4. Reported Connections

5. Report Format

6. Summary

Cloning and adapting an existing template

- Copy an existing application report template

- Paste into the Tabular Report Templates Folder (must be a folder/package)
- Rename the new Tabular Report Template
- Move it into the appropriate element prototype
- Add/remove the content you need.

A. Generating Tabular Reports

B. Creating Tabular Report Templates

1. Scenarios for Starting a New Tabular Report Template

    a. Custom Report

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    c. Model the Structure

2. Collection of Elements to be Reported (scope)

3. Reported Element Properties

4. Reported Connections
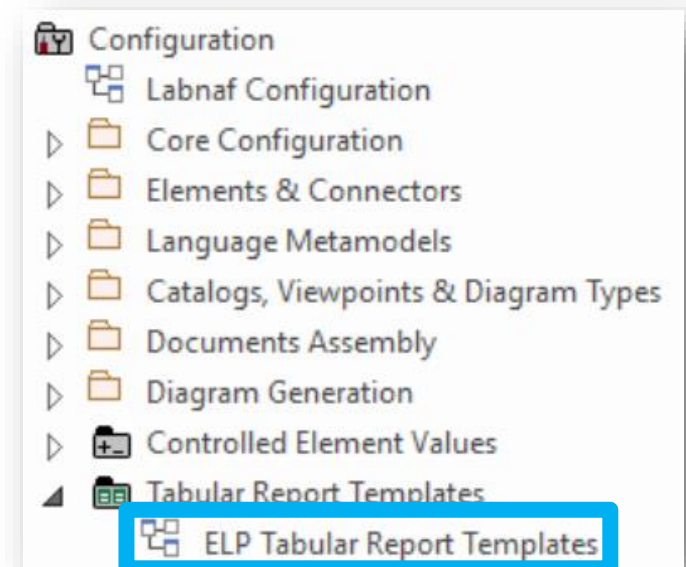
5. Report Format

6. Summary

Define the type of element to be reported...

- If it does not exist yet, create a diagram of type "Element Prototypes"

- Name it, for example, "ELP Tabular Report Templates"
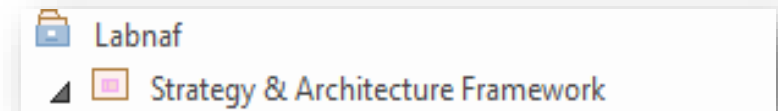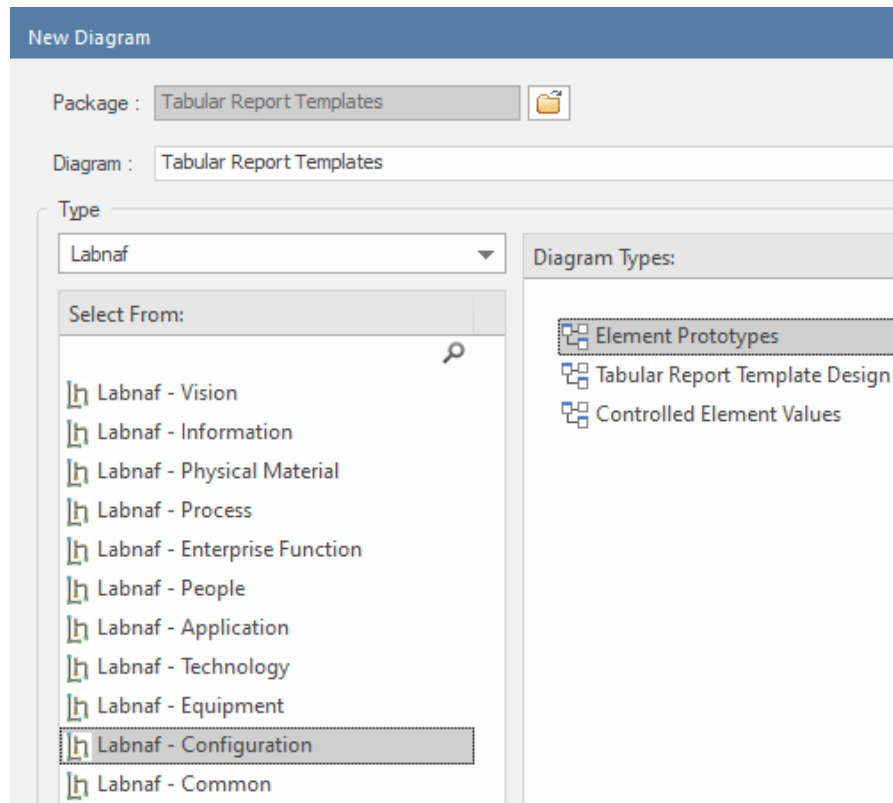
… using an element prototype

- Select an element in the toolbox

  You need only one element prototype of each type. But you can have more, for example, to further classify your report templates.

  Application Service
  Application Platform
  Application Group
  Application

- Name the element prototype for example "Application Report Templates"

  Type of element to be reported

Tabular Report Templates
  ELP Tabular Report Templates
  Application Report Templates
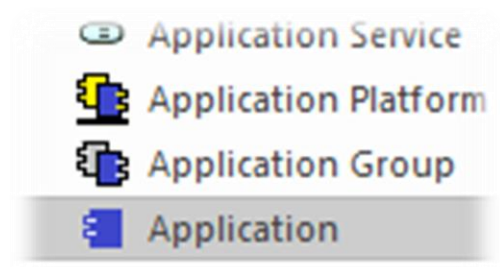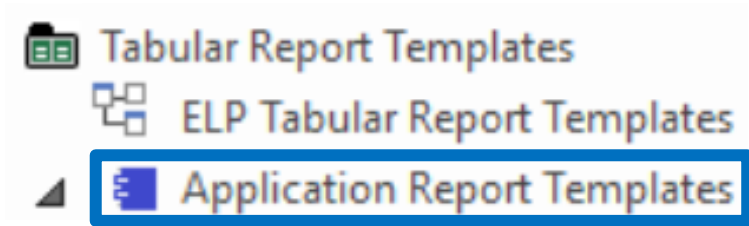
Application Report Templates
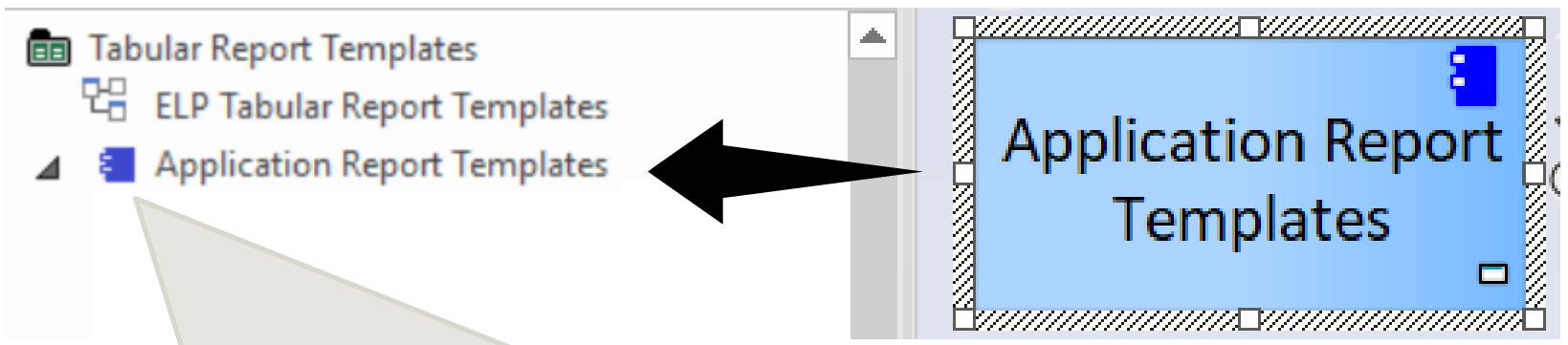
This is an **element protype** that will group all the **application** **report templates** (Excel and CSV).

By default, the Labnaf PowerShell periodically generates all reports for all element prototypes contained in the "Tabular Report Templates" folder. But you can be selective as well.
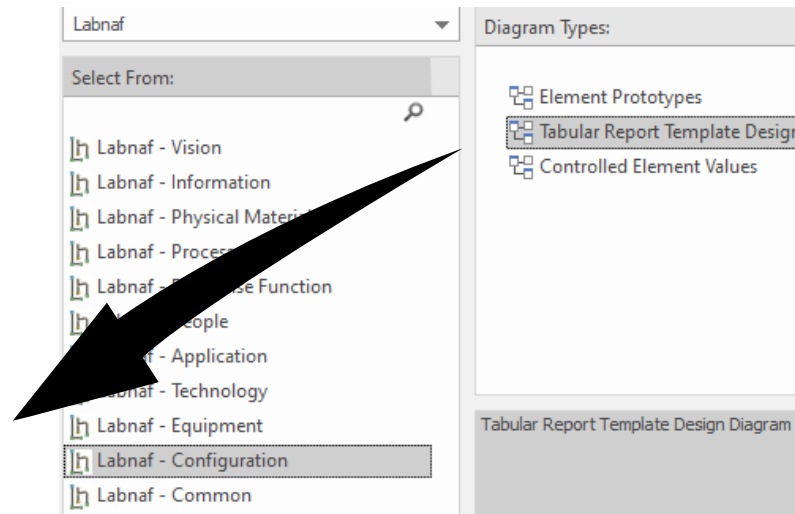
Add a diagram for creating your Application Report Templates

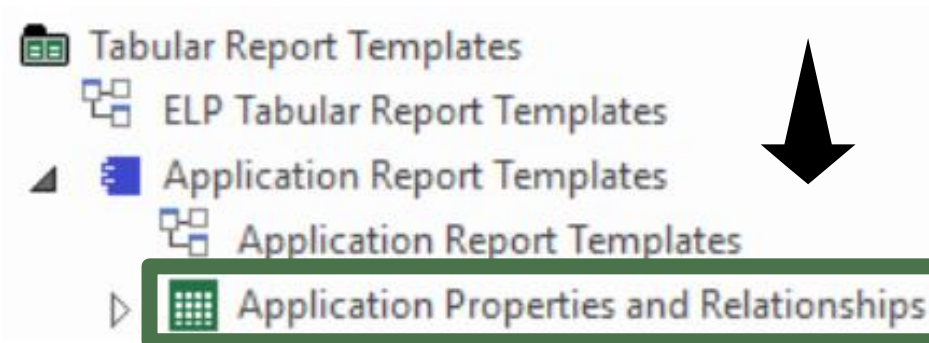Right click on the element prototype and select "**Add Diagram**"
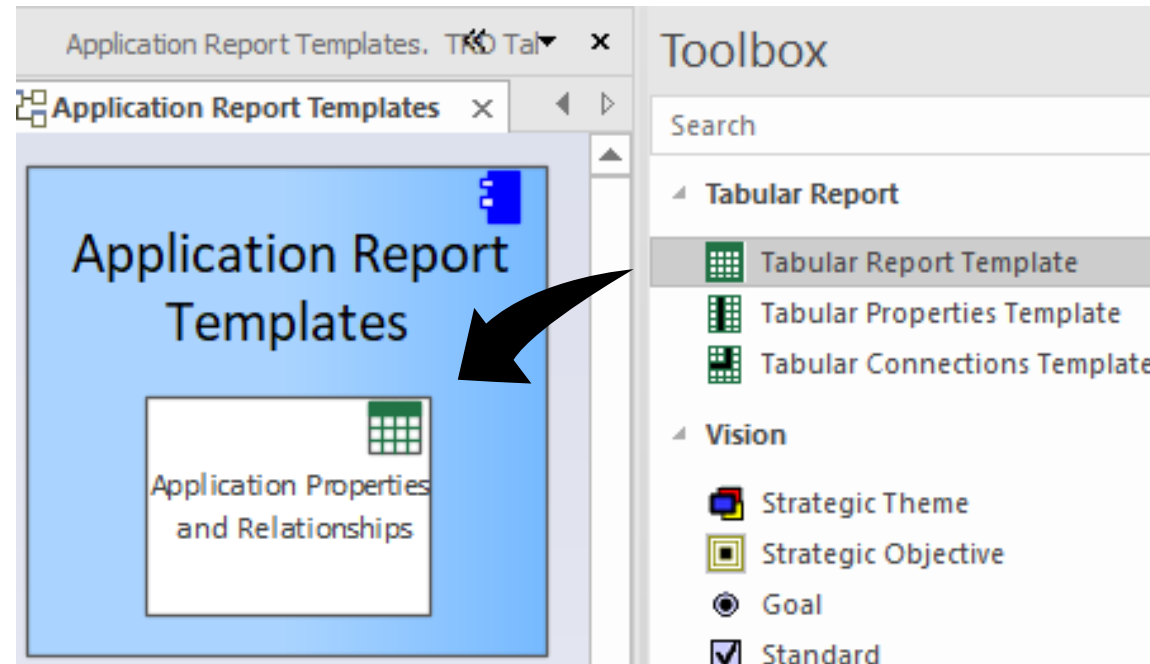
Under "Labnaf Configuration", select "**Tabular Report Template Design**"

Add a report template from the toolbox

… and name it, for example, "Application Properties and Relationships"

Complete/Adapt the New

Tabular Report Template…

A. Generating Tabular Reports

B. Creating Tabular Report Templates

Scope of Reported Elements (rows)

Selecting the

Collection of Elements

to be Reported

{5B 5	Ares
{78 6	Athena Cash Desk
{D6 8	Bellona ESB
{39 7	CMDB
{C4 10	Customer Mobile Application
{23 11	Demeter
{39 12	Generic Web Browser
{3E 13	Hera
{1C 15	Janus
{F9 16	Jupiter Cash Desk
{69 9	Labnaf Powered by Enterprise Architect
{6D 17	LOGIN B2B
{3D 14	Mail Server
{F7 18	Mars
{F8 19	Mars WebApp

Defining a selection of elements (scope) to be reported

Options that can be defined in the template

1. Elements and packages present in a "scope" diagram that belongs to the template
2. Elements selected by some SQL select defined in the template
3. All elements in the catalog (default)

If multiple scopes have been defined, then the above sequence corresponds to priorities

Additional option when the report is generated from the user interface

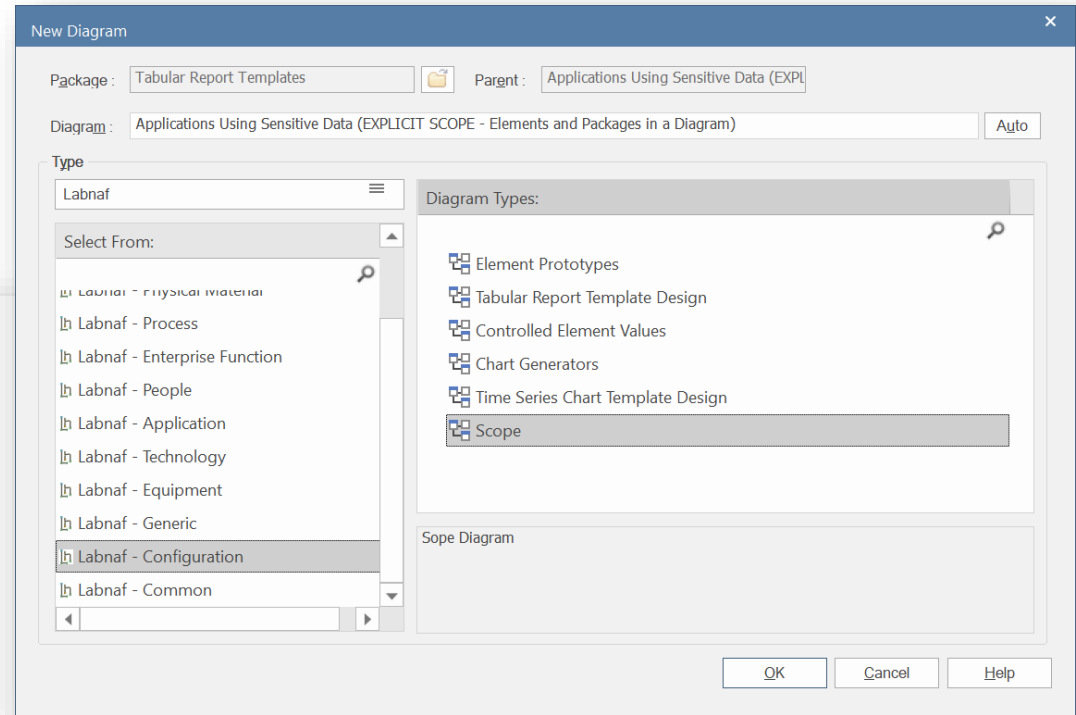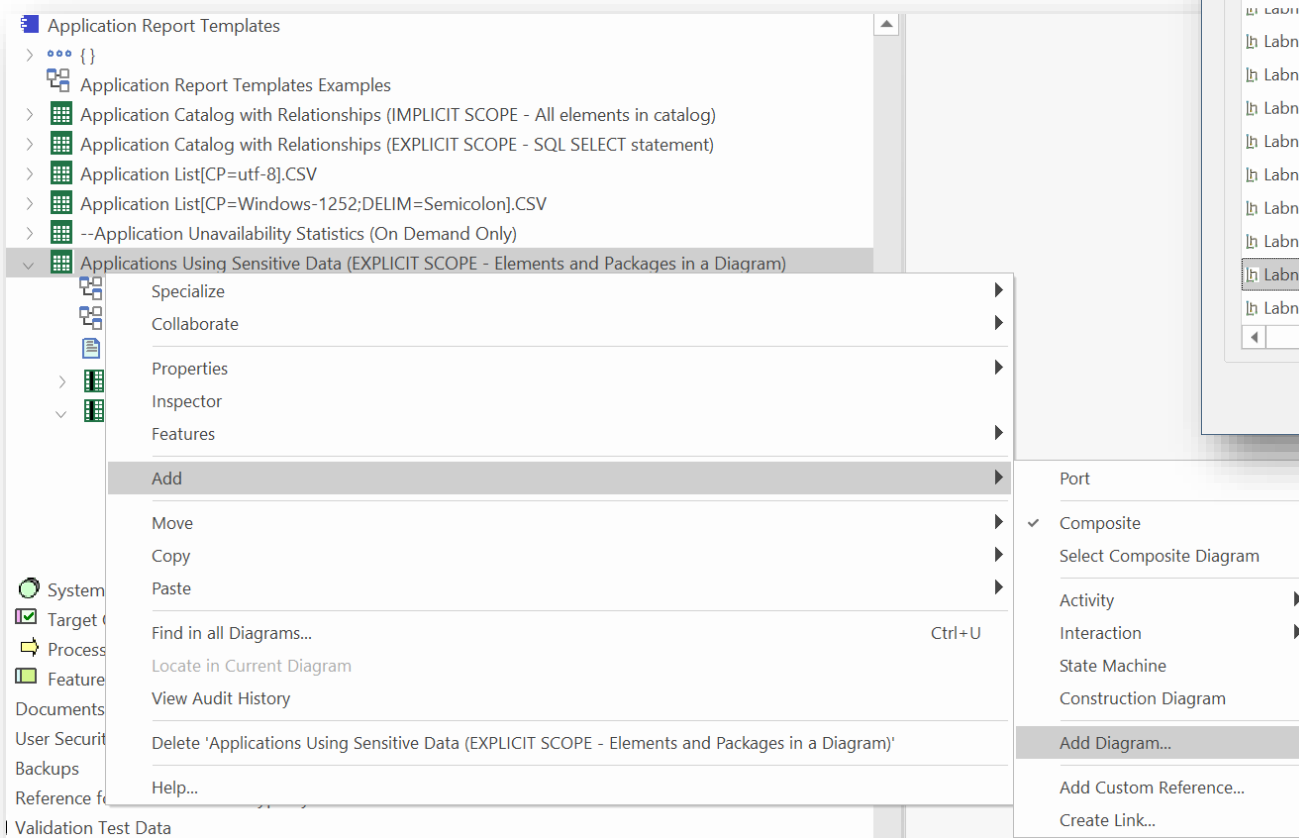- Report only elements or packages selected in the project browser or in the active diagram

When selected, this option overrides all the other ones.

Creating a "scope" diagram defining the collection of element to be reported

- Select a tabular report template and add a « Scope » diagram

Populate the Scope diagram

Add the elements and packages to be reported to the scope diagram => the collected elements are

- Elements and packages of elements (including sub-elements) in the scope diagram
- that have the same stereotype as the <u>parent</u> <u>element</u> <u>prototype</u>

Stereotype = 'LABN_Application'

Scope Diagram

Elements selected by the scope diagram in the generated report

Elements

Packages of Elements

Sub-elements in package

Custom **SQL** for selecting the **collection of elements** to be reported.

By default, all elements with the same stereotype as the element prototype are selected.

Application Report Templates

Application Report Templates

Application Properties and Relationships
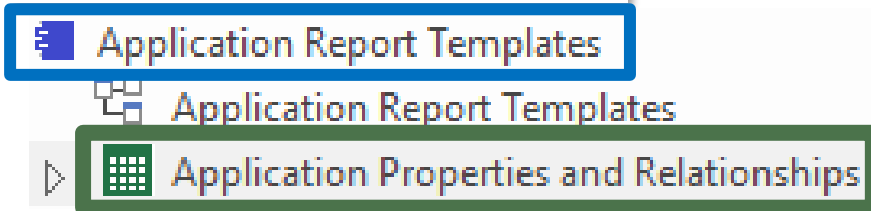
The "**Notes**" property of the Tabular Report Template can contain some SQL SELECT statement. **That SQL statements selects the elements that need to be included in the report.**

Notes

B *I* U

/* Selection in a 2 levels hierarchy of packages using a variable to be defined as an attribute in the "(((ModelingLanguageConfiguration)))" element */

SELECT * FROM t_object o

WHERE stereotype='LABN_Application'

AND o.Package_ID IN

(SELECT package1.package_ID FROM t_package package1

LEFT JOIN t_package package2 ON package2.package_id = package1.parent_id

WHERE package2.ea_guid = '#MyParentApplicationPackageGUID#')

ORDER BY Name

With professional database engines, that SELECT statement can reach a level of sophistication that goes way beyond users' requirements.

Access databases, on the other hand, have some limitations, but it is still usually sufficient to implement most use cases. Access databases are anyway not designed for running on professional database servers.

Sample SQL Statements

/* Selection in a 2 levels hierarchy of packages */

SELECT * FROM t_object o

WHERE stereotype='LABN_Application'

AND o.Package_ID IN

(SELECT package1.package_ID FROM t_package package1

LEFT JOIN t_package package2 ON package2.package_id = package1.parent_id

 WHERE package2.ea_guid = '#uMyVariableContainingAPackageGUID#')

ORDER BY Name

/* selection in a set of packages

SELECT * FROM t_object WHERE stereotype ='LABN_Application' AND package_ID=550

UNION

SELECT * FROM t_object WHERE stereotype ='LABN_Application' AND package_ID=1126

*/

/* Ordered selection in a set of packages (Access only)

SELECT * FROM (

SELECT * FROM t_object WHERE stereotype ='LABN_Application' AND package_ID=550

UNION

SELECT * FROM t_object WHERE stereotype ='LABN_Application' AND package_ID=1126

)

ORDER BY NAME

*/

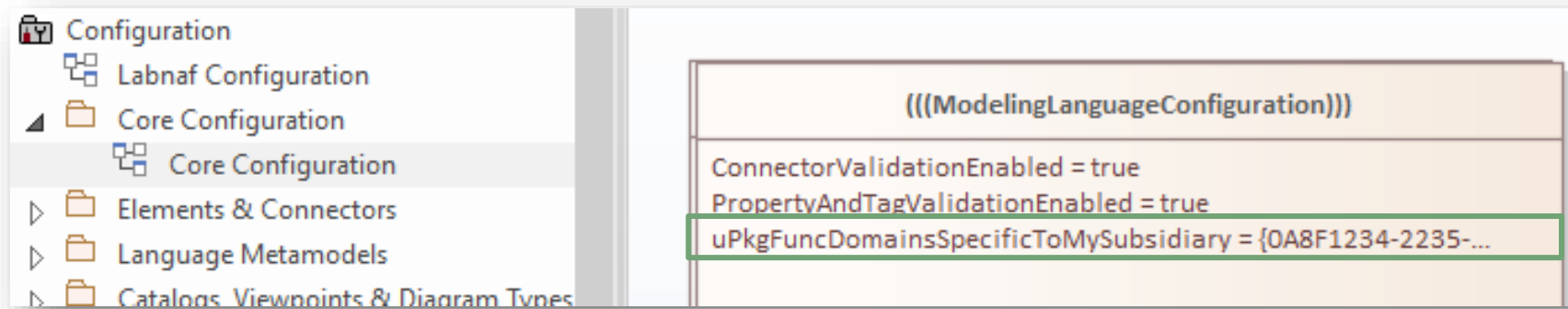Statement can include comments

/* my comment */

These SQL statements can include variables

Variables defined in the core configuration can be used in SQL statements. You can add your own variables.

User-define variable must start with the letter **'u'**

Example: A user-defined variable containing the GUID of a package:

Configuration
  Labnaf Configuration
  Core Configuration
    Core Configuration
  Elements & Connectors
  Language Metamodels
  Catalogs, Viewpoints & Diagram Types

(((ModelingLanguageConfiguration)))

ConnectorValidationEnabled = true
PropertyAndTagValidationEnabled = true
uPkgFuncDomainsSpecificToMySubsidiary = {0A8F1234-2235-...

Usage of the user-defined variable in a SQL statement:

```
select * from t_object o inner
join t_package p on o.package_id = p.package_id
  where o.ParentID = 0 and o.stereotype like 'LABN_%'
  and p.ea_guid = '#uPkgFuncDomainsSpecificToMySubsidiary#'
ORDER BY o.Name
```

Default Scope = All elements in the catalog

By default, all elements with the same stereotype as the element prototype "LABN_xxx" are selected from the related catalog with stereotype "LNCAT_xxx".

```
SELECT * FROM t_object WHERE stereotype = 'LABN_Application'
AND Package_ID IN
(SELECT PDATA1 from t_object
 where Object_Type='Package' and Stereotype = 'LNCAT_Application')
order by Name
```

Application Report Templates

Application Report Templates

Application Properties and Relationships

A catalog is a **set of packages** (folders) with a **specific stereotype**

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2. Collection of Elements to be Reported (scope)

3. Reported Element Properties

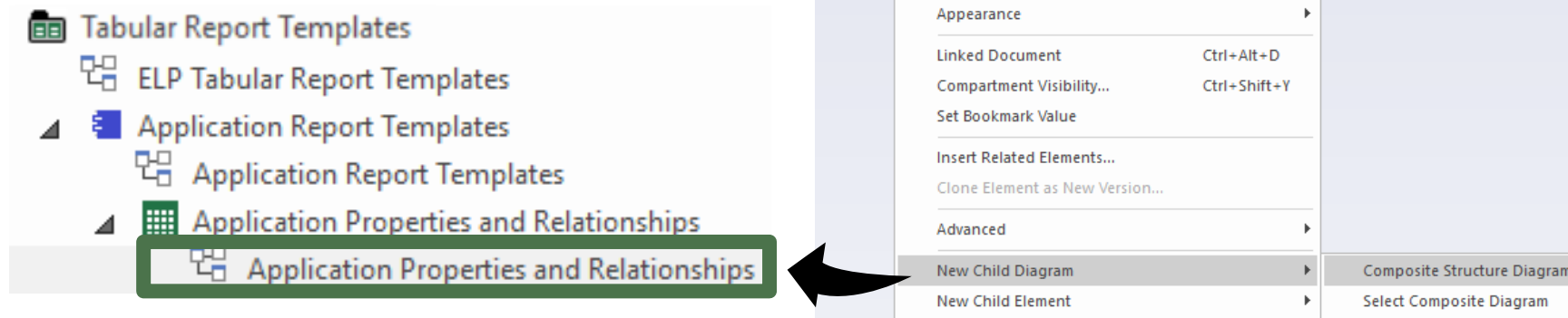4. Reported Connections

5. Report Format

6. Summary

Properties

Reporting Element

Properties and Tagged Values

Add a diagram to enter properties and connections to the report template

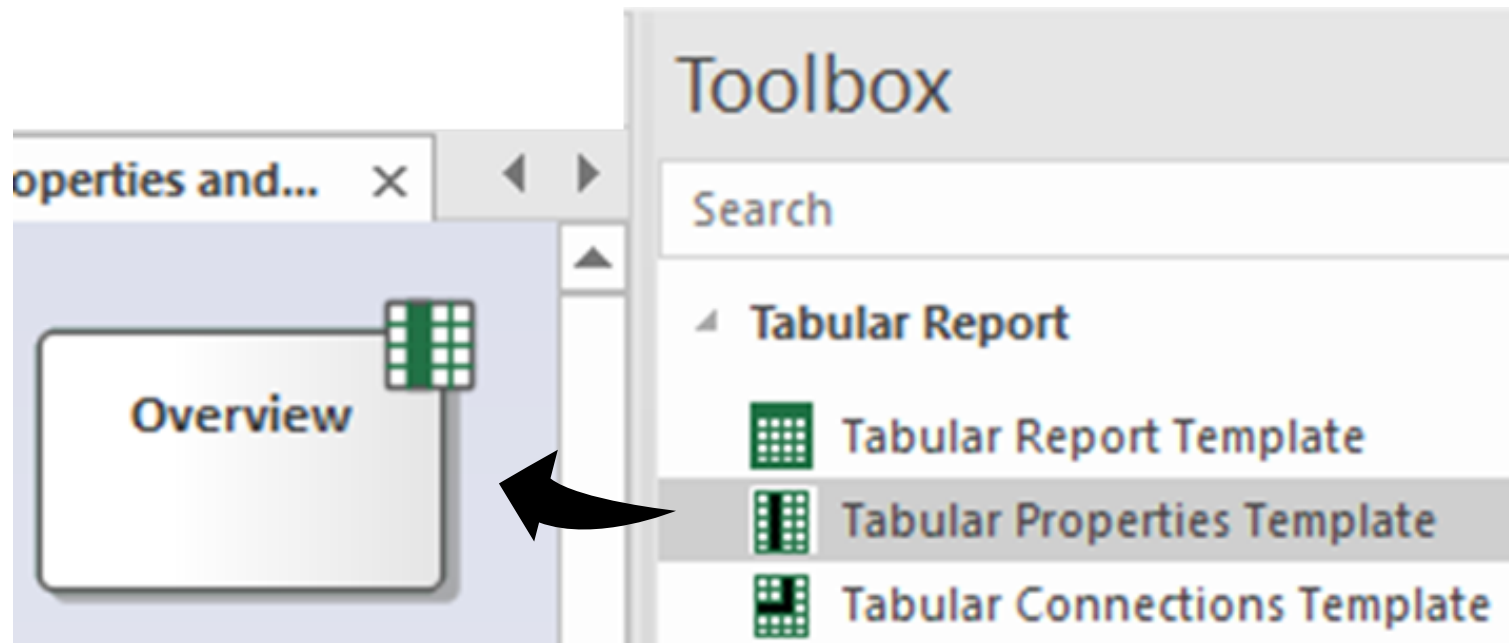Right click on the report template and select "**New Child Diagram > Composite Structure Diagram**"

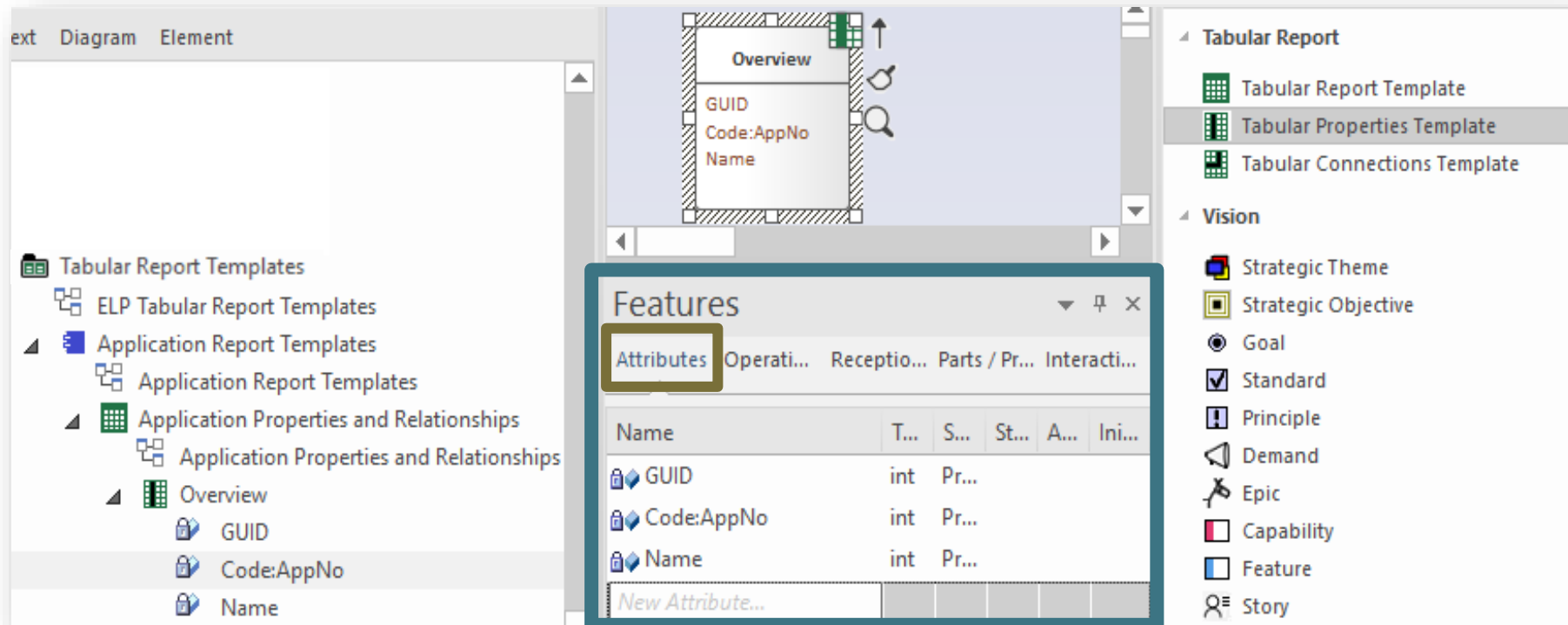=> A new **Tabular Report Template Design** diagram has been created

Add a "**Tabular Properties Template**" to the new Tabular Report Template Design diagram

…. and name if for example "Overview"

Add Properties

- Select the Tabular Properties Template in the diagram
- Press F9 to open the "**Features / Attributes**" window
- Enter the desired property and/or tagged value **names**

Add Properties (cont.)

In the output tabular reports...
Background element colors will be assigned to property column groups.

If an element appears in more that one diagram the color is selected from the first diagram found.

If such diagram exists under the Tabular Report element then this diagram takes precedence.

The color cannot be the default element color (otherwise in will be blank).

Group **Coloring**

Grouping (Tabular Properties Template)

Element **Properties** and/or **Tagged Values** (any sequence)

Group Name

Optional **Renaming**

If a property name includes the character ":" then
- the text before the ":" is the property name in the repository
- the text after the ":" is the column name to be used in the report

Type CTRL + Up or Down Arrow to change the sequence in the report
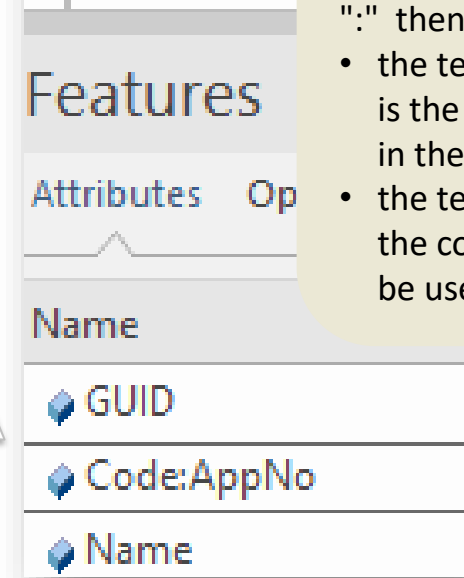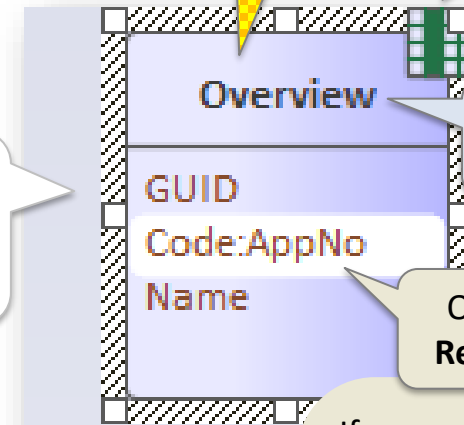
Adding more groups of properties and/or tagged values

Group Ordering

The sequence of elements being added in the diagram defines the sequence in the report

Auto-coloring cells following their value

Numeric and date cells are formatted according to the recognized data type.

Numeric cells can be automatically colored by setting parameters in the attribute's Initial Value.

Parameters are separated by a semi-column (";").

Recognized parameters are (in any order):

- **Autocolo**r => numbers will be colored following a green to red scale where the **lowest** value is best, this being colored in green
- **HighestIsBest** => Coloring is reversed i.e. numbers will be colored following a green to red scale where the **highest** value is best, this being colored in green

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Connections

Reporting

Element

Connections/Relationships

Example: Report the functional blocks, functional areas and functional domains **realized by** the applications

Hierarchy in the model
(Browser Window)

Functional Domain
  Functional Area
    Functional Block

Functional Domain
Functional Area
Functional Block
Application
Implicit realizations
Explicit realization

Implicit relationships are calculated from explicit relationships

Connected element **types can be different in the hierarchy**

Functional Domains   Functional Areas   Functional Blocks

Add a "**Tabular Connections Template**" to the new Tabular Report Template Design diagram

.... and name it "Applications REALIZING"

Naming Tabular Connections Templates

The **name of the template** is used as a **prefix for the connections group name**
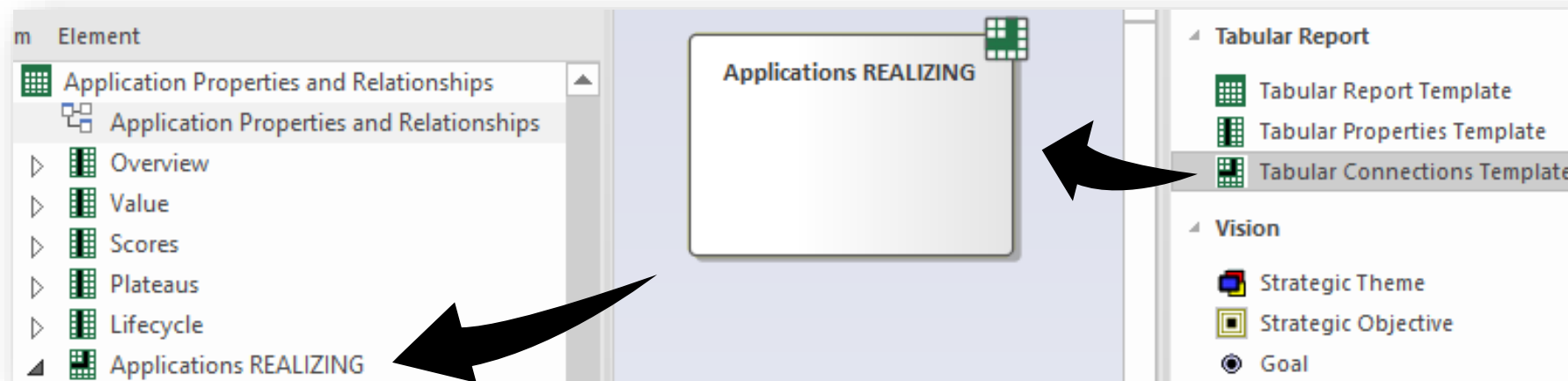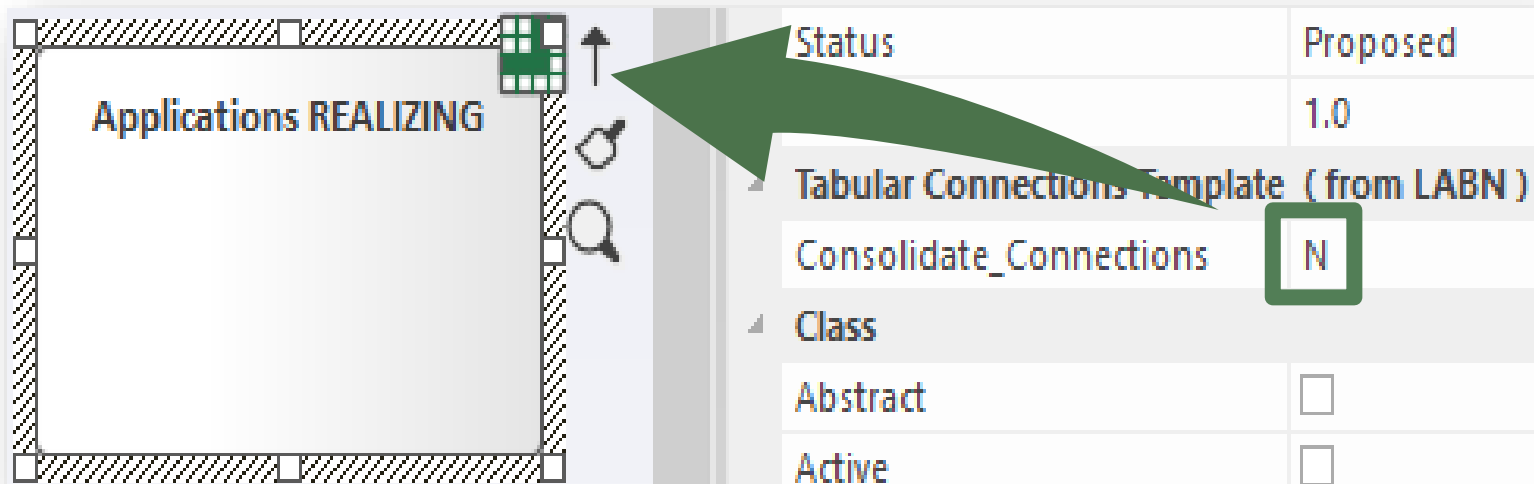
To consolidate …

Status	Proposed
	1.0
Tabular Connections Template (from LABN)	
Consolidate_Connections	Y
Class	
Abstract	☐
Active	☐

… or not to consolidate connections

Status	Proposed
	1.0
Tabular Connections Template (from LABN)	
Consolidate_Connections	N
Class	
Abstract	☐
Active	☐

Define the type of connection to be reported

Add a diagram of type "**Element Prototypes**" under the new tabular connection template and name it, for example, "Connection Type"
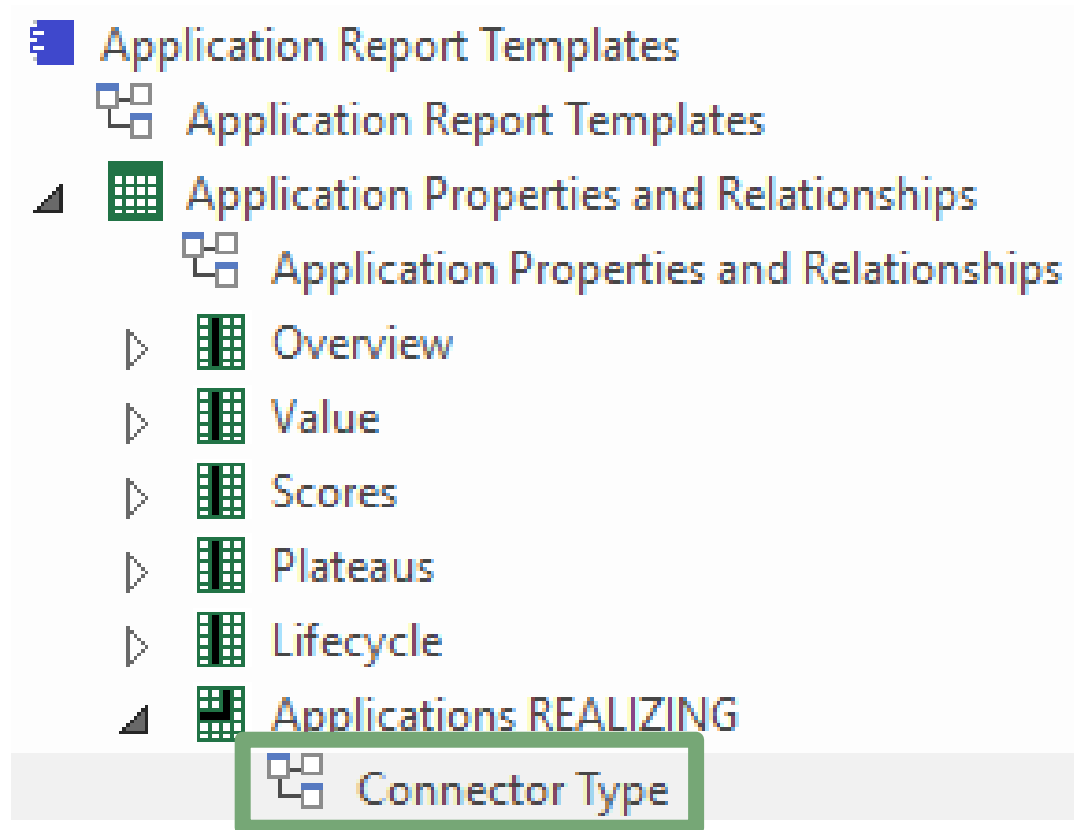
Define the type of connection to be reported

- Add the element prototype to the diagram

- In the browser window, create a hierarchy of elements for which explicit and implicit connections should be reported

- Connect the element prototype to the lowest level in the hierarchy

Type of connection to be reported
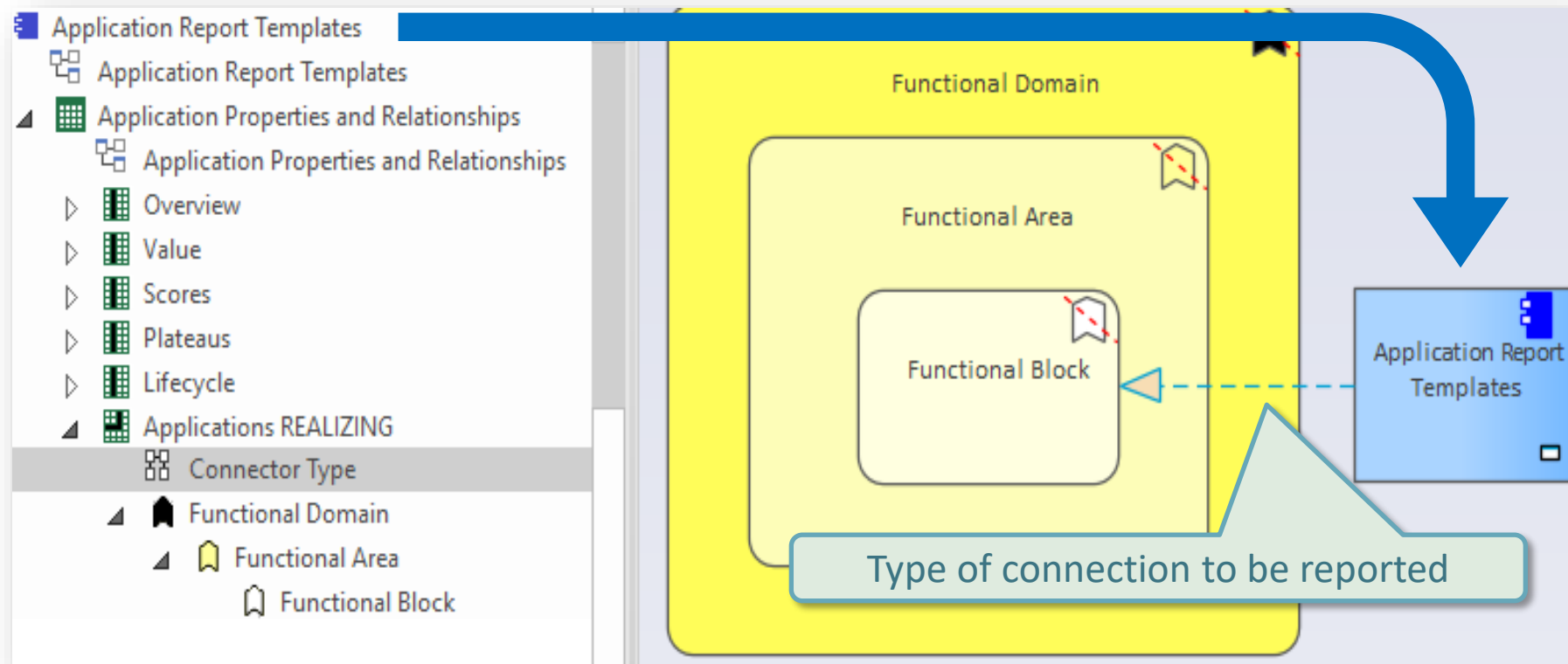
Resulting Connection Group Name

The **type of the connected element** (implicit or explicit) is used as a **suffix for the connections group name**

The **name of the template** is used as a **prefix for the connections group name**

Colors of Connection Groupings
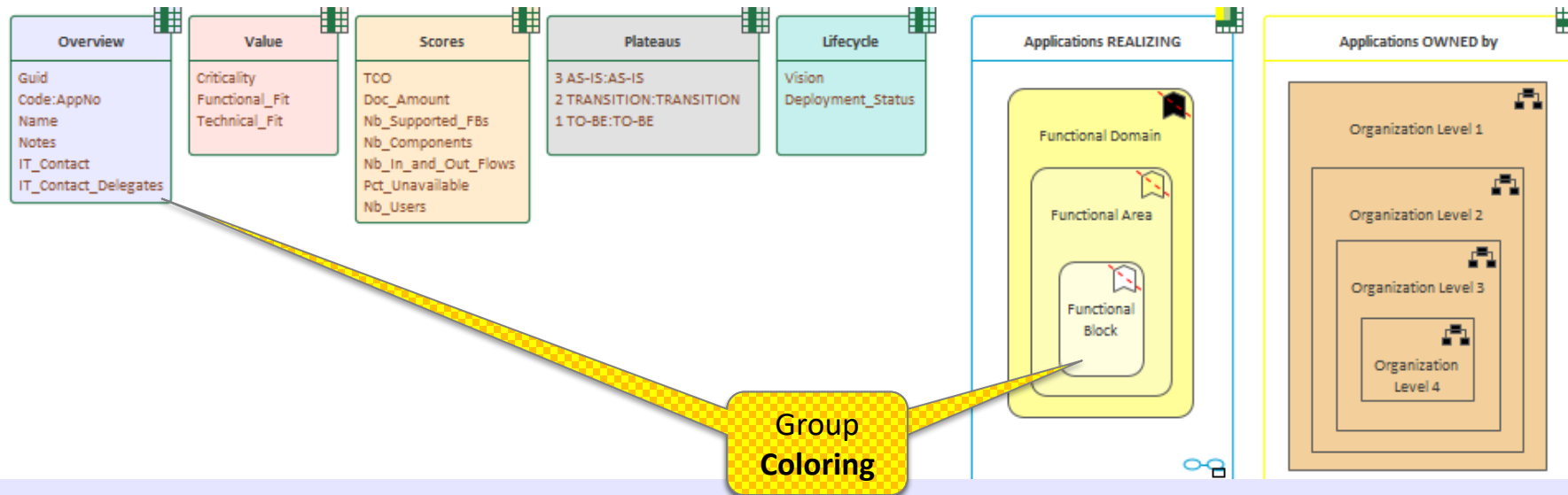
In the output tabular reports…
Background element colors will be assigned to column groups.

If an element appears in more that one diagram the color is selected from the first diagram found.

If such diagram exists under the Tabular Report element then this diagram takes precedence.

The color cannot be the default element color (otherwise in will be blank).

Scope of Connected Elements (columns)
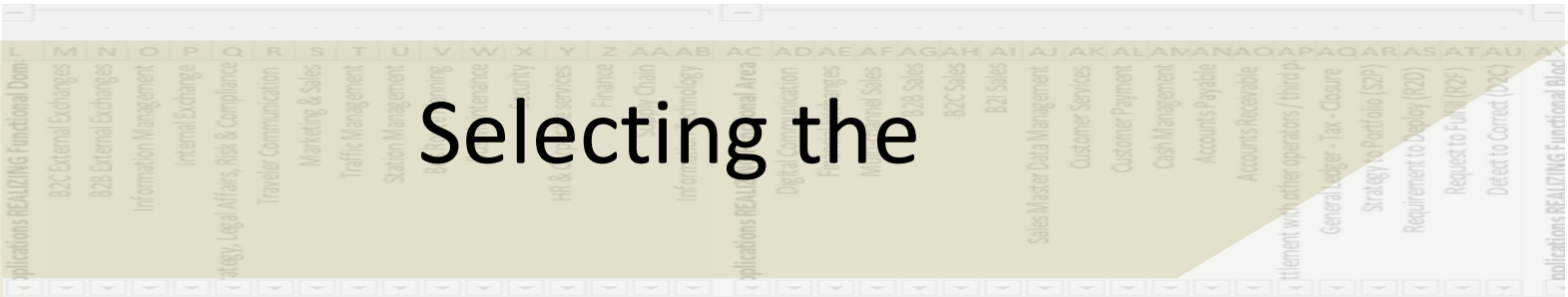
Selecting the

Collection of

Connected Elements

Selecting <u>connected</u> elements to be reported
Implicit (default) Selection

Application Report Templates
- Application Report Templates
- Application Properties and Relationships
  - Application Properties and Relationships
  - Overview
  - Value
  - Scores
  - Plateaus
  - Lifecycle
  - Applications REALIZING
    - Connector Type
    - **Functional Domain**
      - Functional Area
        - Functional Block
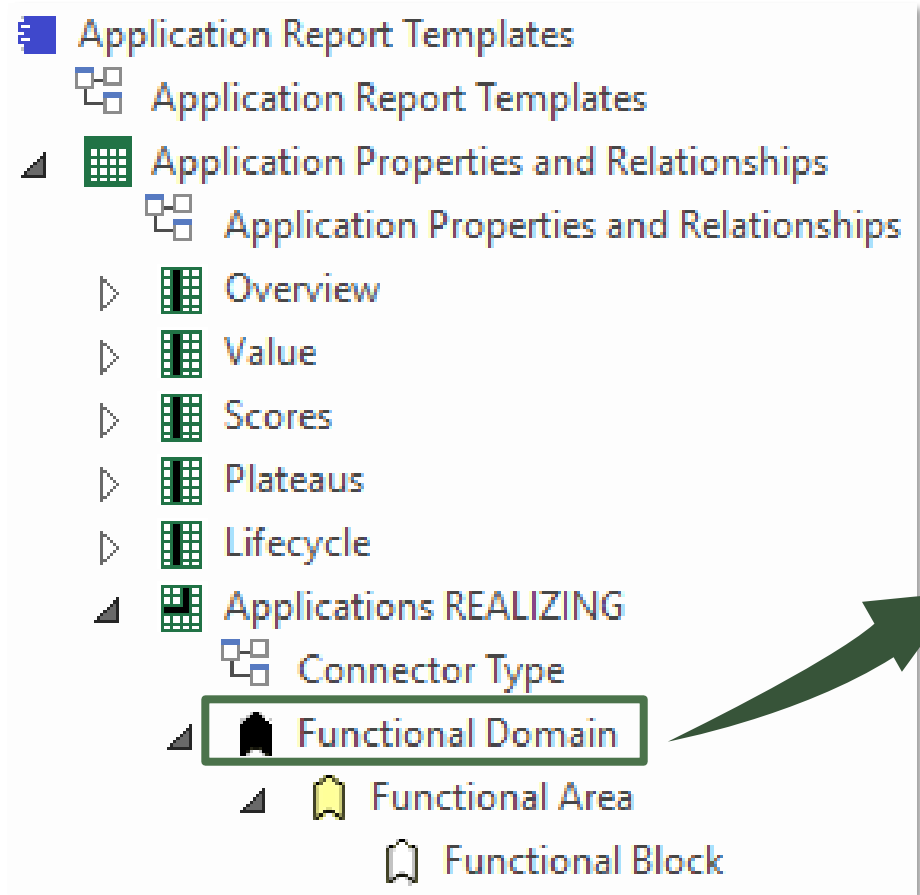
By default, Labnaf selects all elements with that same stereotype in the related catalog.

So, in this example, it will collect all elements having a stereotype '**LABN**_FunctionalDomain' in all packages having a stereotype '**LNCAT**_FunctionalDomain'.

Selecting <u>connected</u> elements to be reported
Explicit Selection

- Add a diagram of any type under the new tabular connection template and name it, for example, "Connected Root Element or Package".

- Add any number of packages and/or (connected) elements to be reported.

  The elements in the packages or the explicit elements should be at the top level in the connected elements hierarchy
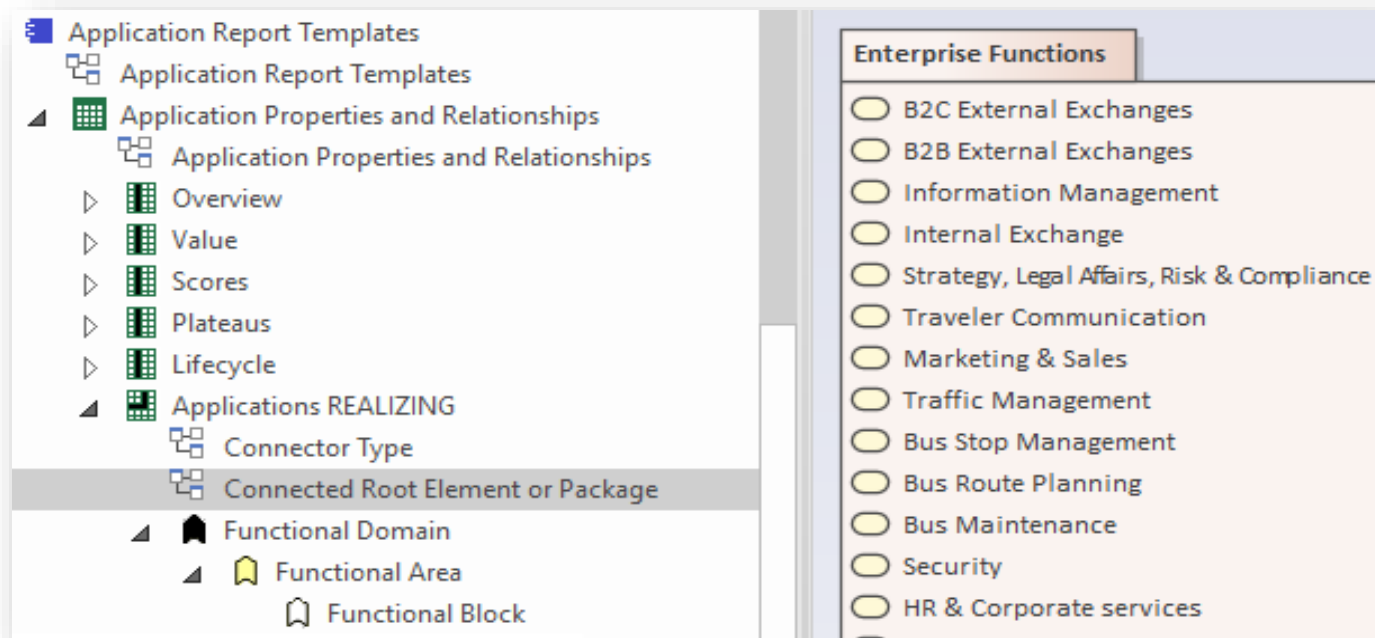
Tabular Report Templates
- ELP Tabular Report Templates
- Application Report Templates
  - Application Report Templates
  - Application Properties and Relationships
    - Application Properties and Relationships
    - ▷ Overview
    - ▷ Value
    - ▷ Scores
    - ▷ Plateaus
    - ▷ Lifecycle
    - ▷ Applications REALIZING
    - ▷ Applications OWNED by
  - Application Calculated Values.CSV
    - Application Calculated Values
    - ▷ Overview
    - ▷ Calculated Values
  - ▷ System Software Report Templates

Legend:
- Tabular Report Template
- Tabular Properties Template
- Tabular Connections Template

You can create any number of element prototypes and templates of any kind and in any order

A. Generating Tabular Reports

B. Creating Tabular Report Templates

Defining the Report Format

- The report format is defined in the report template name
- The format is therefore also visible in the generated report name (same name as the template)

  => by looking at a report name, you can immediately determine its format

Application Report Templates

▷ ••• { }

  Application Report Templates Examples

▷ Application Catalog with Relationships (IMPLICIT SCOPE - All elements in catalog)

▷ Application Catalog with Relationships (EXPLICIT SCOPE - SQL SELECT statement)

▷ Application List[CP=utf-8].CSV

▷ Application List[CP=Windows-1252;DELIM=Semicolon].CSV

▷ --Application Unavailability Statistics (On Demand Only)

▷ Applications Using Sensitive Data

> Default report **format** is **Excel**.
> To generate a **CSV** report, add a "**.CSV**" extension to the report template name.

> **Inbound/outbound CSV character encoding** and **column delimiters** can be specified in the tabular report name itself.
>
> For further information, see **« Inbound/Outbound Content Formatting »** on the Guidance web site.

A. Generating Tabular Reports

B. Creating Tabular Report Templates

1. Scenarios for Starting a New Tabular Report Template

    a. Custom Report

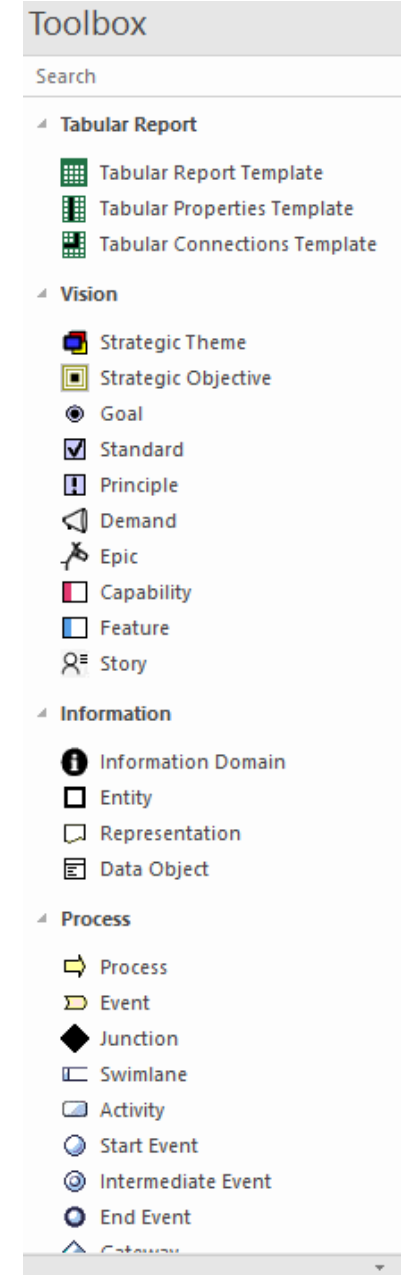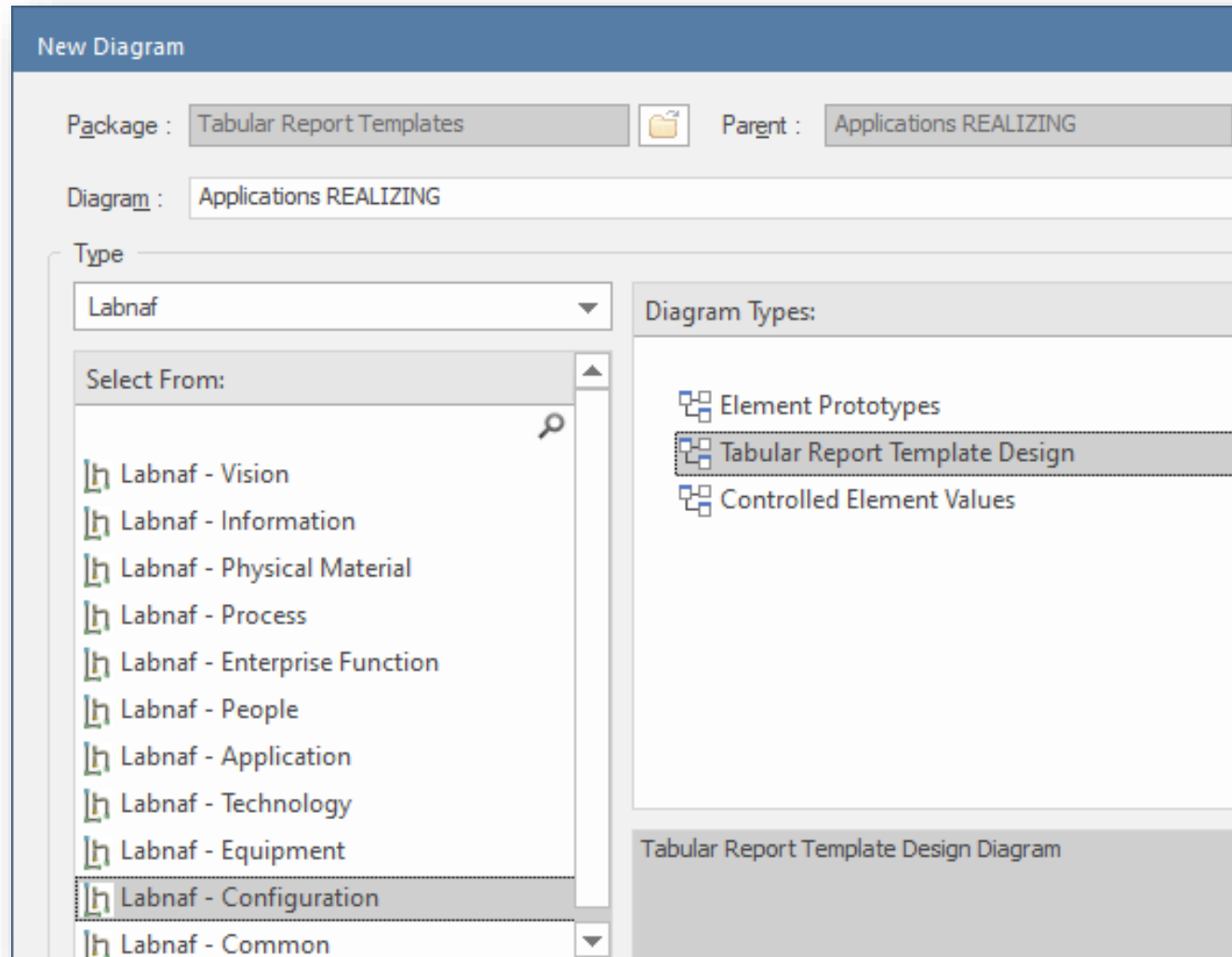   b. Clone & Edit

    c. Model the Structure

2. Collection of Elements to be Reported (scope)

3. Reported Element Properties

4. Reported Connections

5. Report Format

6. Summary

Tabular Report Summary

A tabular report can contain tagged values, properties and connections to any kind of element.

Tabular Report Summary (cont.)

An element prototype for grouping tabular reports
So we can see that the embedded tabular report definitions are for elements of that specific type and stereotype.

A folder where we define tabular reports

Tabular report template

Element properties to be reported (and renamed if needed)

Element connections to be reported and consolidated at several levels of detail. Connected element types and stereotypes can be different at each level.

Optional

Configuration
:
- Tabular Report Templates
  - Tabular Report Templates
  - **Application Report Templates**
    - Application Properties and Relationships
      - Application Properties and Relationships
      - **Overview**
        - Code:AppNo
        - Guid
        - Name
        - Notes
      - Plateaus
      - Lifecycle
      - Applications REALIZING
        - Connected Root Element or Package
        - Connector Type
        - Functional Domain
          - Functional Area
            - Functional Block
        - Applications OWNED by
          - Connected Root Element or Package
          - Connector Type
          - Organization Level 1
            - Organization Level 2
              - Organization Level 3
                - Organization Level 4

Package : Tabular Report Templates   Parent : Applications REALIZING

Diagram : Applications REALIZING

Type

Labnaf

Select From:

- Labnaf - Vision
- Labnaf - Information
- Labnaf - Physical Material
- Labnaf - Process
- Labnaf - Enterprise Function
- Labnaf - People
- Labnaf - Application
- Labnaf - Technology
- Labnaf - Equipment
- Labnaf - Configuration
- Labnaf - Common

Diagram Types:

- Element Prototypes
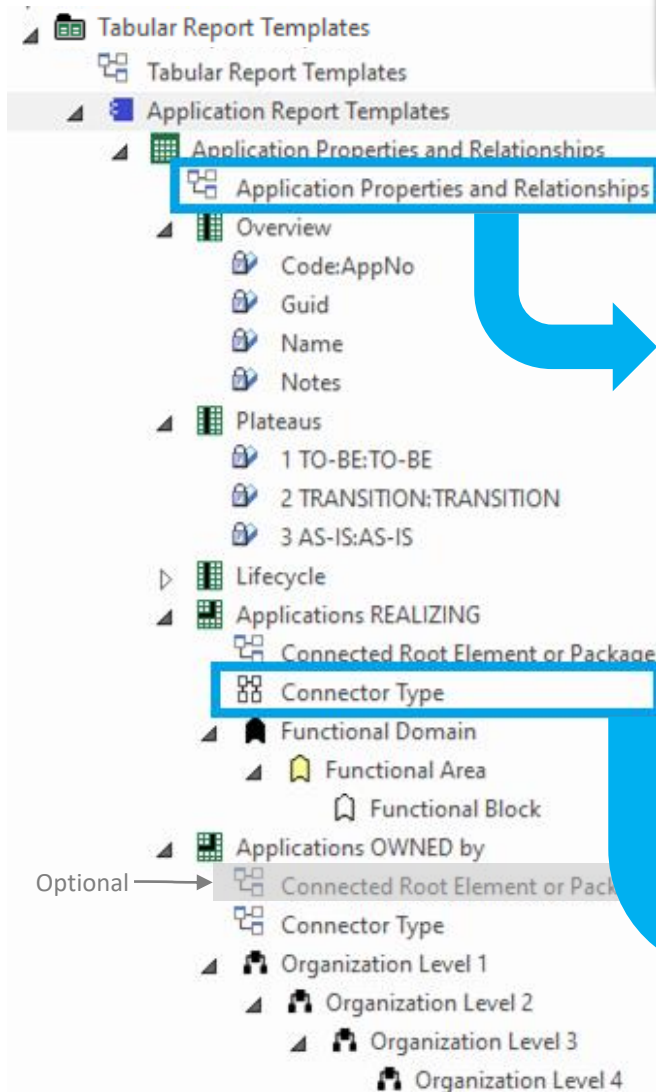- Tabular Report Template Design
- Controlled Element Values

Tabular Report Te...

Toolbox

Search

▾ Tabular Report
- Tabular Report Template
- Tabular Properties Template
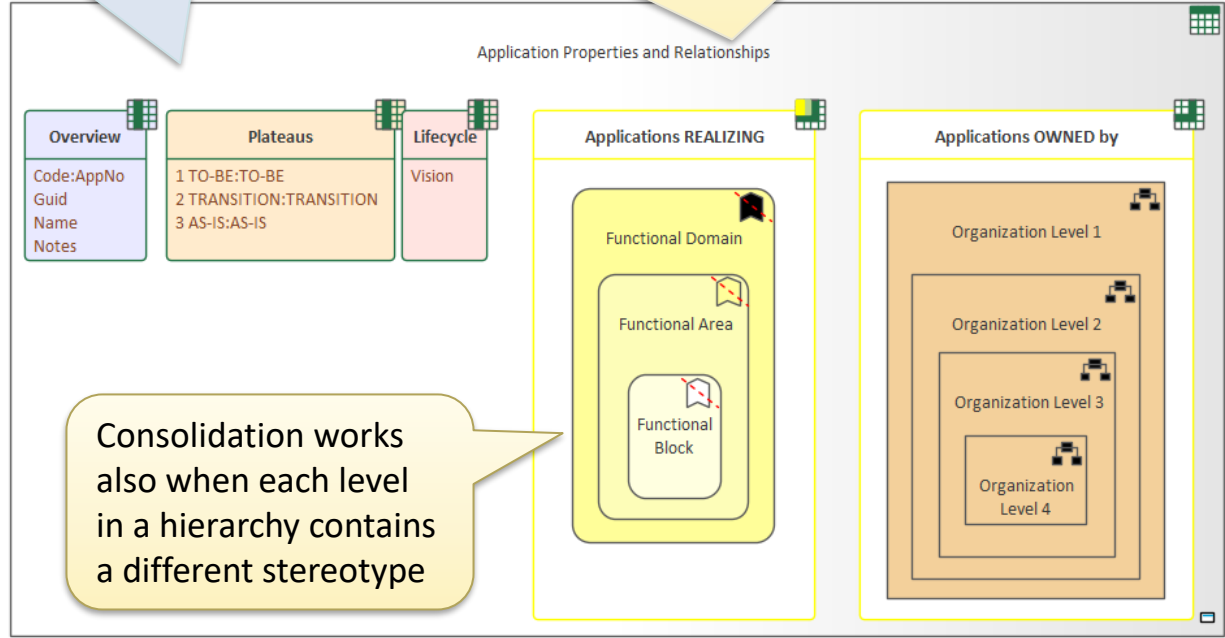- Tabular Connections Template

Tabular Report Summary (cont.)

Model the element properties and/or tagged values with optional renaming and colored groupings

Model the specific connections in specific direction to specific types of elements.
Model the connection **consolidation** into parent element relationships

Consolidation works also when each level in a hierarchy contains a different stereotype
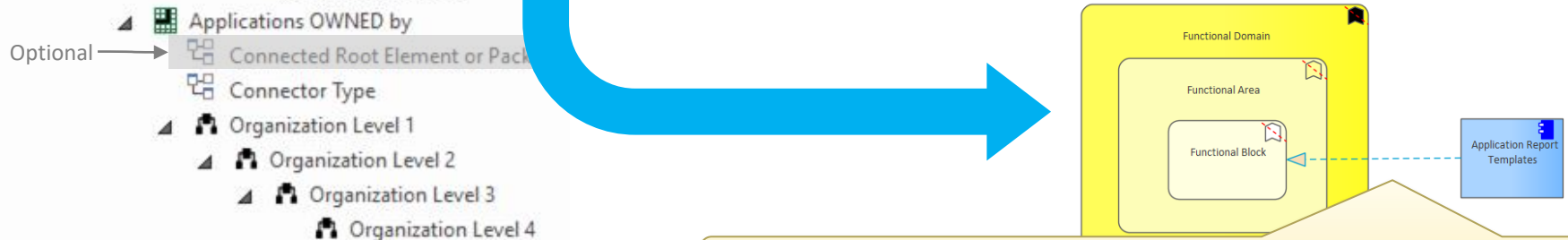
Model the leaf element **connector** to be reported and consolidated