

# “Only Connect”

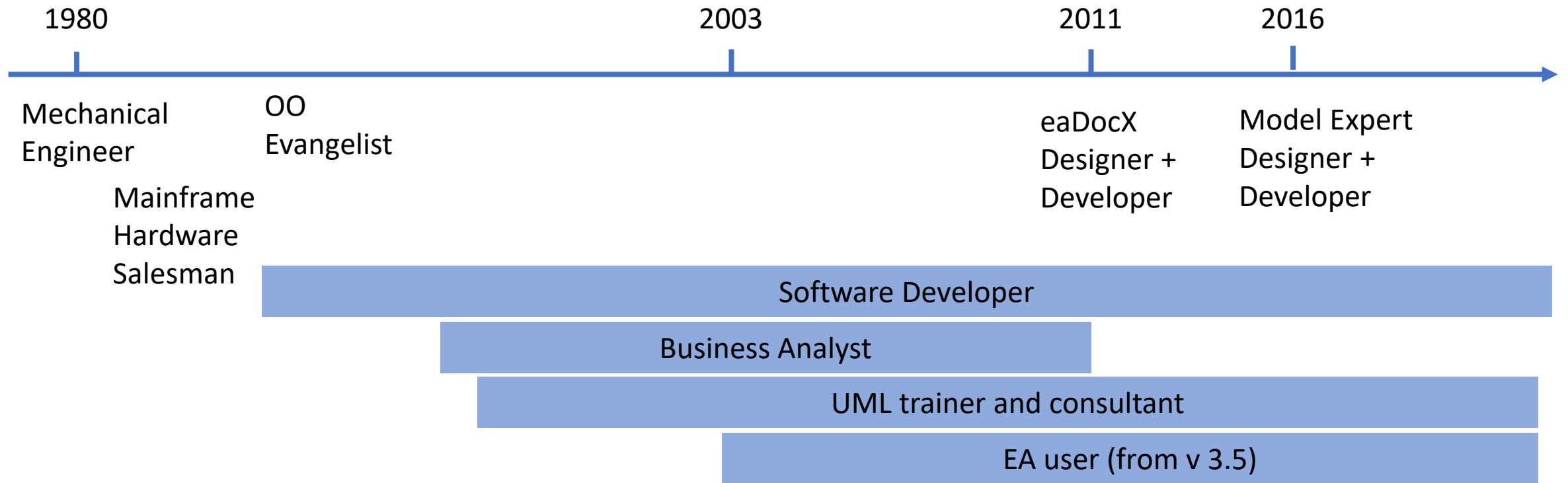
## Getting EA traceability to work for you

EA Global Summit 2021

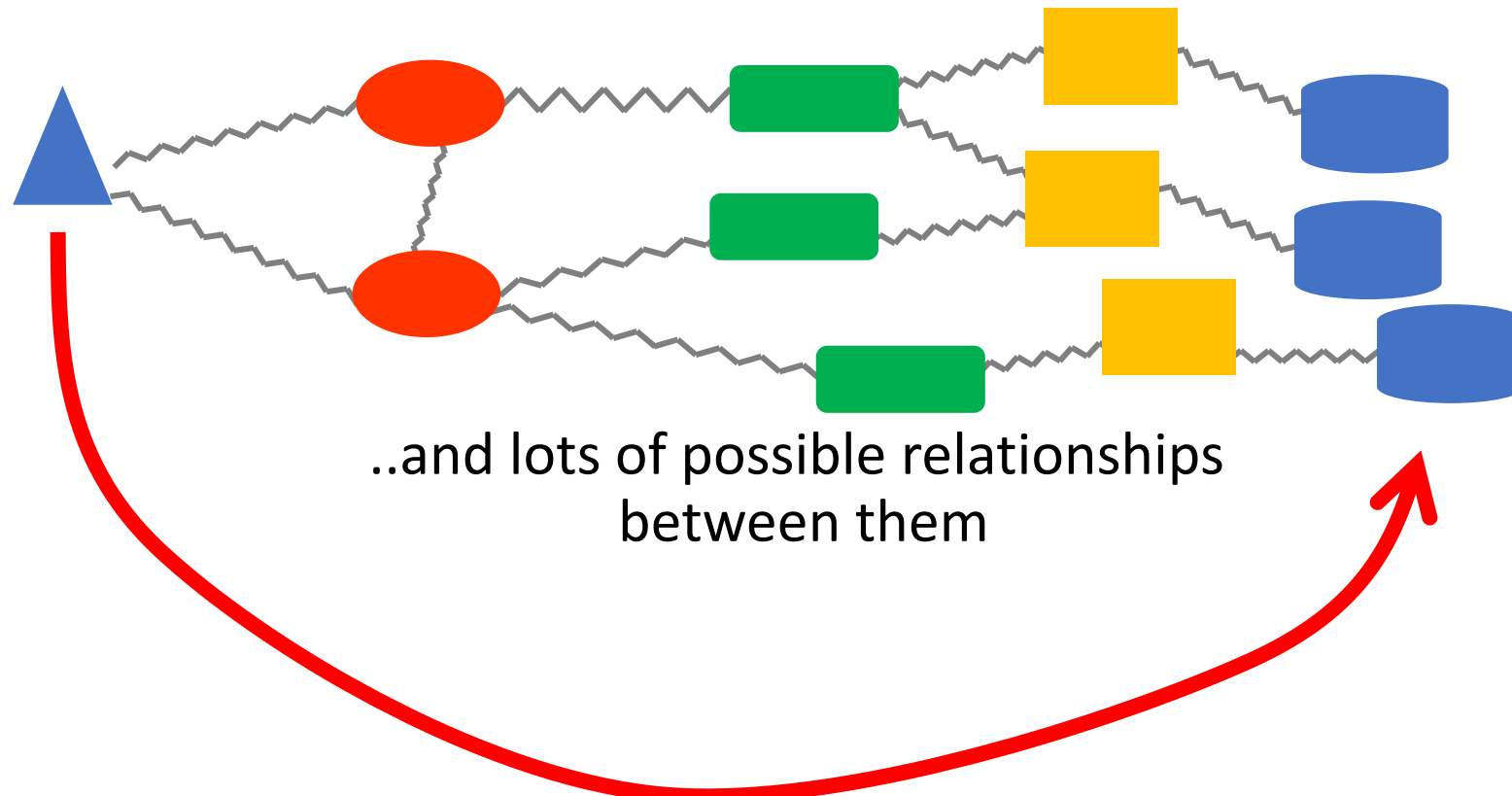
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# About me



There are lots of ‘things’ we might need to model..



“Traceability” – a ‘virtual relationship’

# To get VALUE from traceability:

- MODEL must be consistent
- OUTPUTS must be useful\*

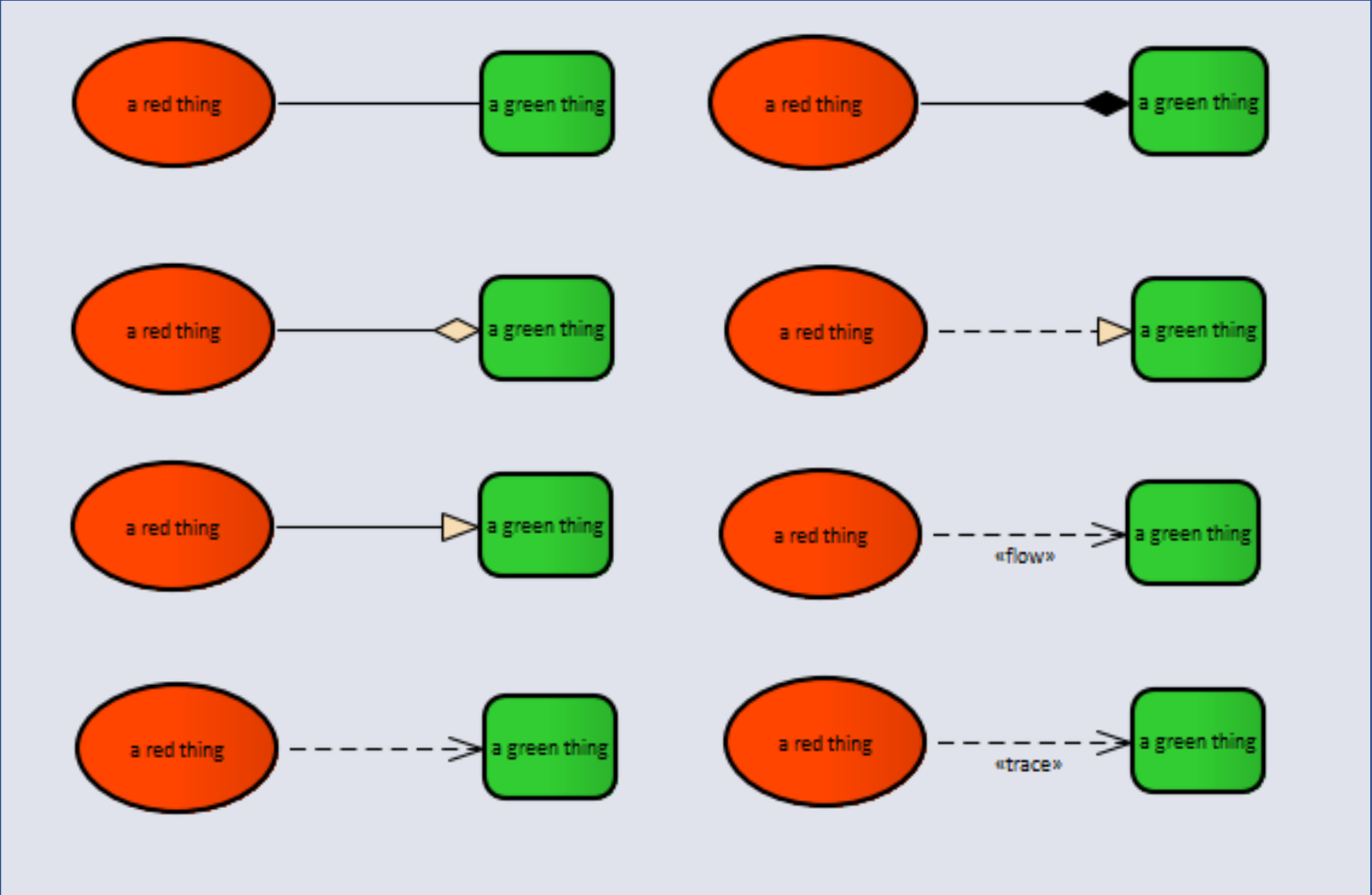
\* Useful to the consumer of the information

# 1. Making your models consistent

- Same style everywhere
- Obvious, clear – no ‘clever’ bits of EA
- Easy to learn – uses standards
- Easy to manage

**This session: consistency of connections**

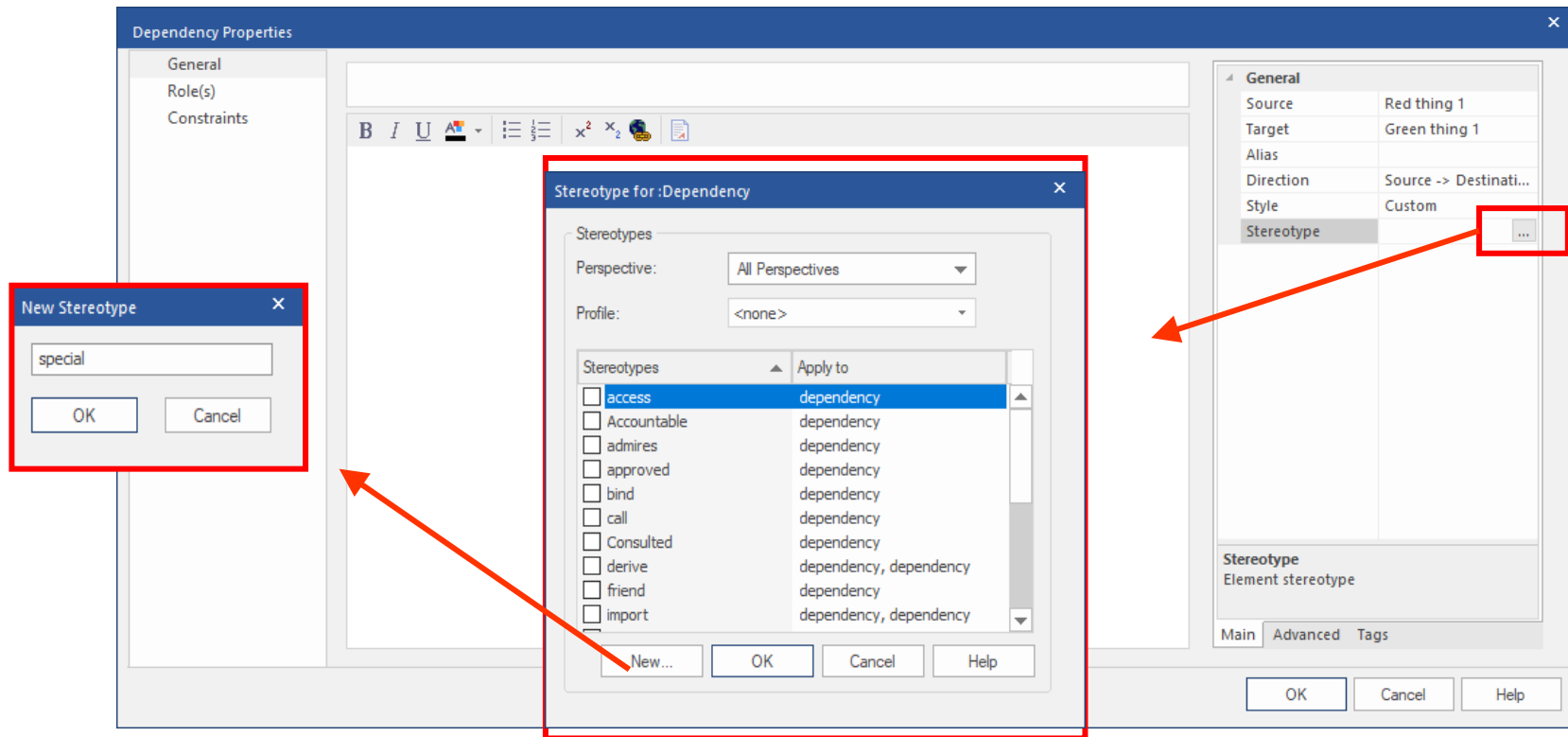
# UML has lots of connectors – SO USE THEM



*“I need a new kind of relationship?”*

# Stereotyped relationships

EA gives us EVERY chance to choose an existing one..  
..but also a 'New' option (if security settings allow)



# Now part of our portfolio of stereotypes

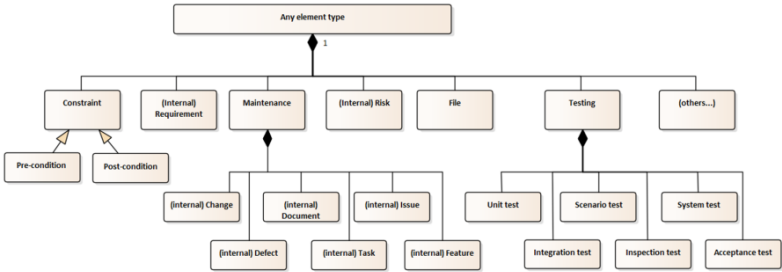
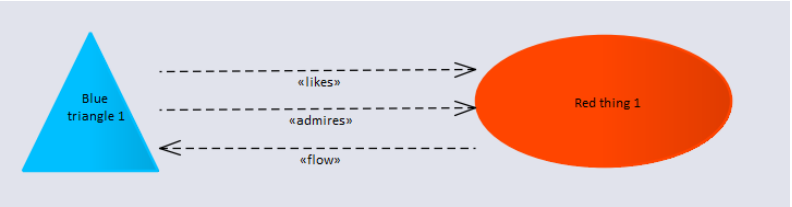
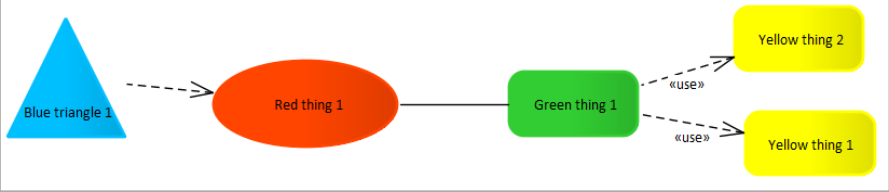
The diagram illustrates a set of dependencies between red and green objects. Red thing 1 is connected to Green thing 1 with a dashed dependency arrow labeled «special». Red thing 3 is connected to Green thing 3 with a dashed dependency arrow. Red thing 2 is not connected to any green object. The 'Stereotype for :Dependency' dialog box shows the 'special' stereotype selected in the 'Apply to' list. The property sheet on the right shows the configuration for the 'Dependency' stereotype, with the 'Stereotype' field set to 'Dependency' and a red box highlighting the '...' button next to it.

=> Consistency



# EA has more ways to capture relationships

- 1. **Multiple** relationships
- 2. **Textual** relationships
- 3. **Secret** relationships
- 4. **Internal** relationships
- 5. **Super** relationships
- 6. **Virtual** relationships

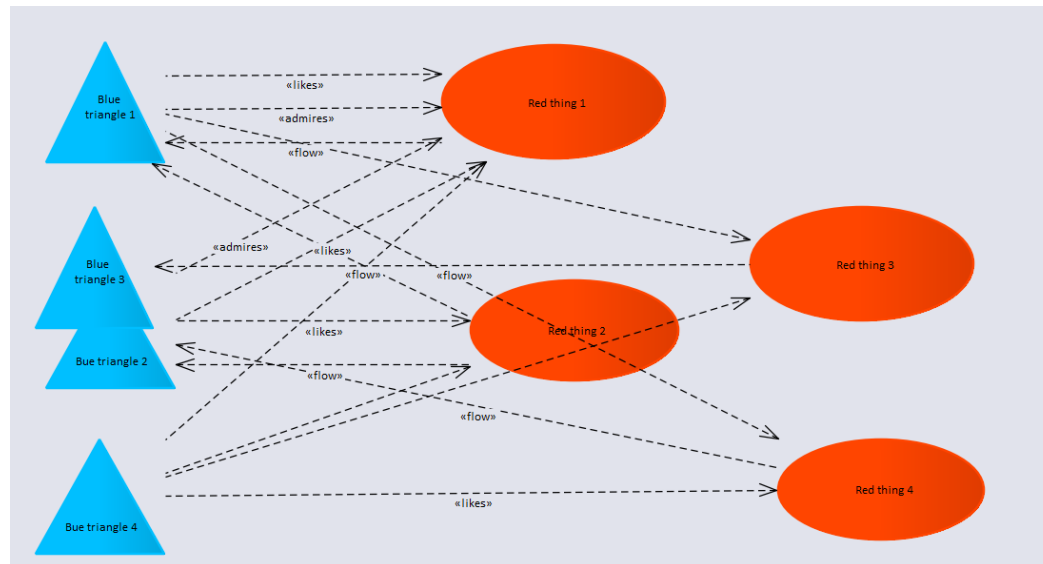


# 1. Multiple relationships

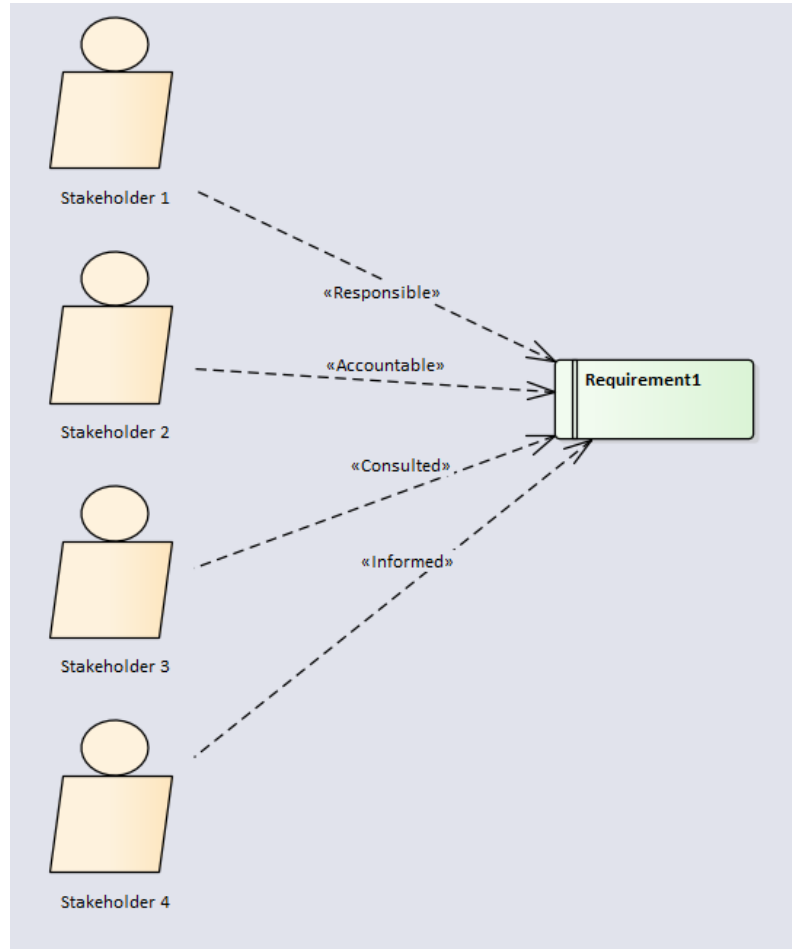
Perfectly OK UML / EA

...just getting quite hard to understand

...and hard to keep consistent



# 1. Multiple relationships – Example - RACI Requirements



Useful – sometimes...

## 2 . Textual Relationships – using notes

Requirement : My new requirement

Properties

- General
- Responsibilities
- Requirements
- Constraints
- Scenarios
- Files
- Related
- Links

Name: My new requirement

This is interesting, and so is another requirement [Requirement2](#), but I can not connected to that.

Also link to [Requirement 3](#)

Requirement : My other requirement

Name: My other requirement

This is the other requirement

Hyperlink Details

Type: File

Address:

- Attribute
- Browse for File
- Diagram
- Diagram Image
- EA Command
- Element
- Element Image
- File
- Help
- Image Manager
- Learning Center
- Matrix
- Operation
- Package
- Search
- SimRun
- Team Document
- Web Site

OK Cancel Help

ALMOST a hyperlink:

- Text is COPIED at creation time
- Doesn't update ☹️

- Can be printed as a [hyperlink](#) in eaDocX documents
- (other document generated?)

Sometimes useful – don't make it part of your standards

# 3. Secret relationships – Tagged values

Used by some UML-based languages, probably for good reasons

The 'Insert Related Elements' dialog box contains the following table:

Depth	Name	Package	In Diagram
<input type="checkbox"/>	Feature1	Secret relationships	No
<input type="checkbox"/>	Feature2	Secret relationships	No
<input checked="" type="checkbox"/>	Requirement2	Secret relationships	No
<input type="checkbox"/>	Risk1	Secret relationships	No
<input type="checkbox"/>	Stakeholder 1	RACI	No
<input type="checkbox"/>	Stakeholder 2	RACI	No
<input type="checkbox"/>	Stakeholder 3	RACI	No
<input type="checkbox"/>	Stakeholder 4	RACI	No

The 'Traceability' view shows a tree structure for Requirement1 with the following sections:

- needed by
  - Stakeholder 1
  - Stakeholder 2
  - Stakeholder 3
  - Stakeholder 4
  - Risk1
- depends on
  - Feature1
  - Feature2
  - Requirement2
- Tagged Value References
  - (QAProcess) BusinessProcess1

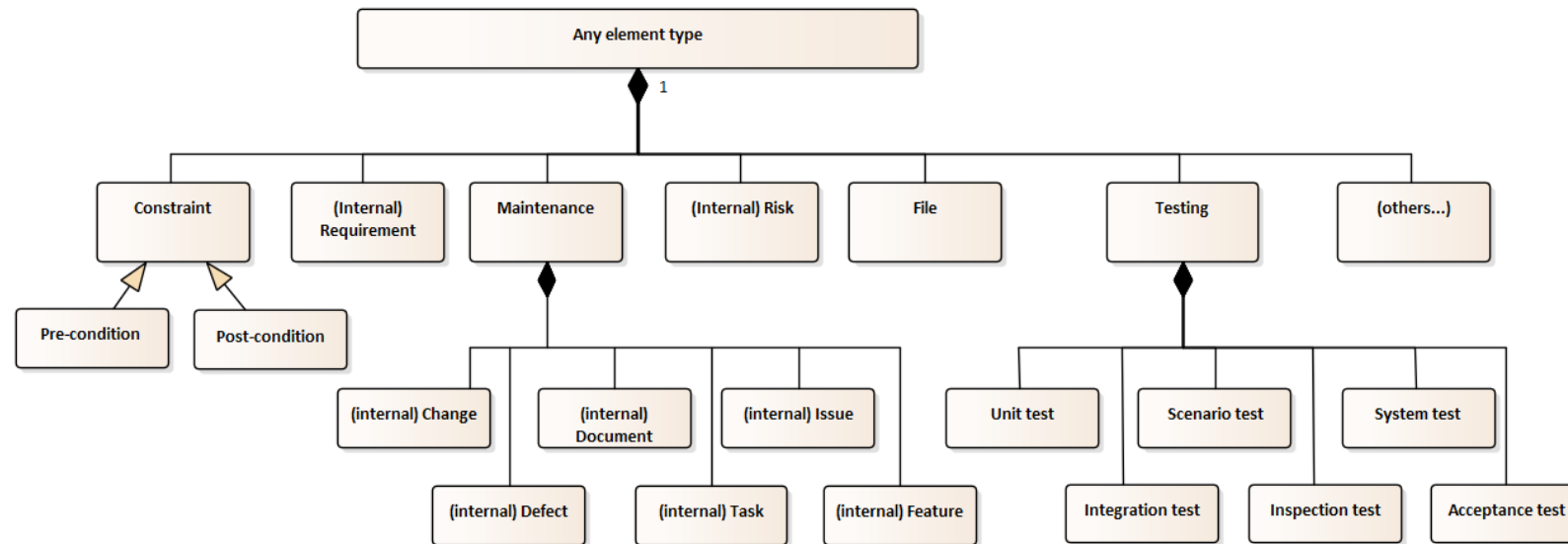
The two elements are related, but not in a way you can see in a diagram 😞

My favourite bit of EA

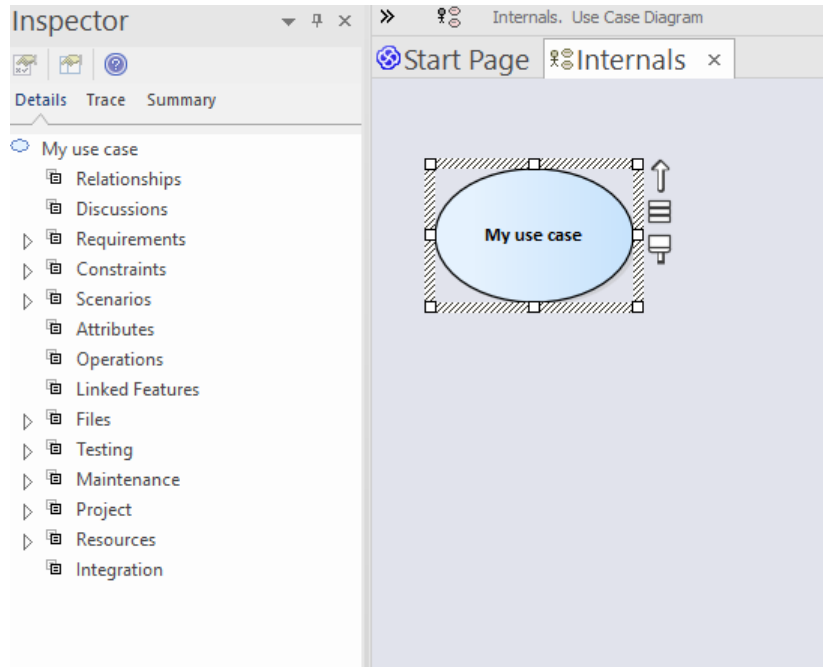
# 4. Internal relationships

EA also allows some 'special' relationships, which are all Composites.

- So, if the parent is deleted, all the children are deleted as well.
- And each belong to exactly one element.
- And none of them can appear in any diagram.



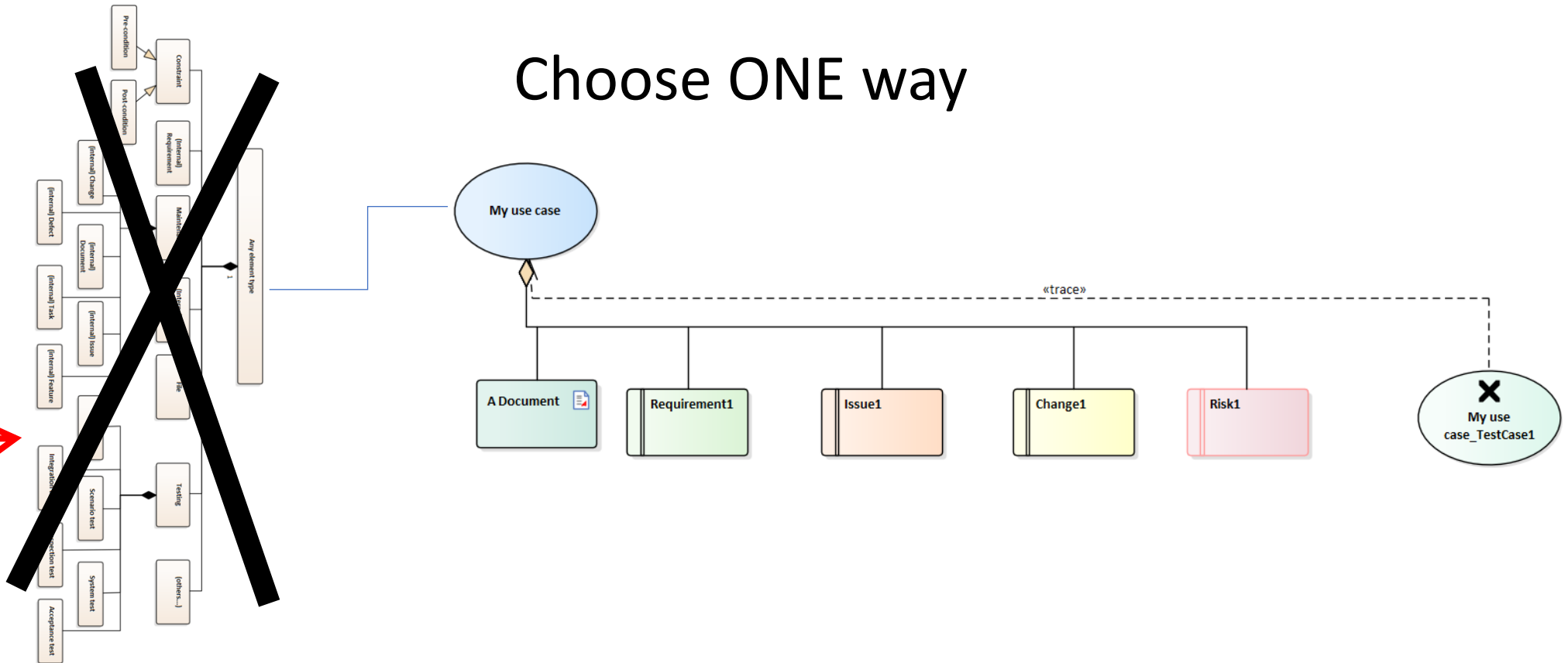
## 4. Find them through the UI – if you must...



- EA “Inspector” finds everything
- And creates most
  - ‘Maintenance’ and ‘Testing’ tabs allow create & edit of the rest
  - Changing your mind is possible – but only for Internal Requirements => normal requirements

# 4. Alternatives to internal 'elements'

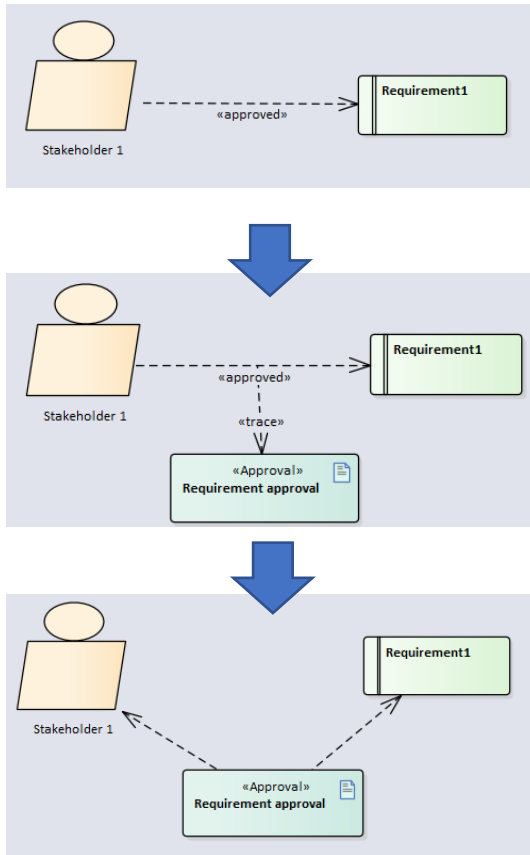
Choose ONE way



My LEAST favourite bit of EA



# 5. Super-relationships



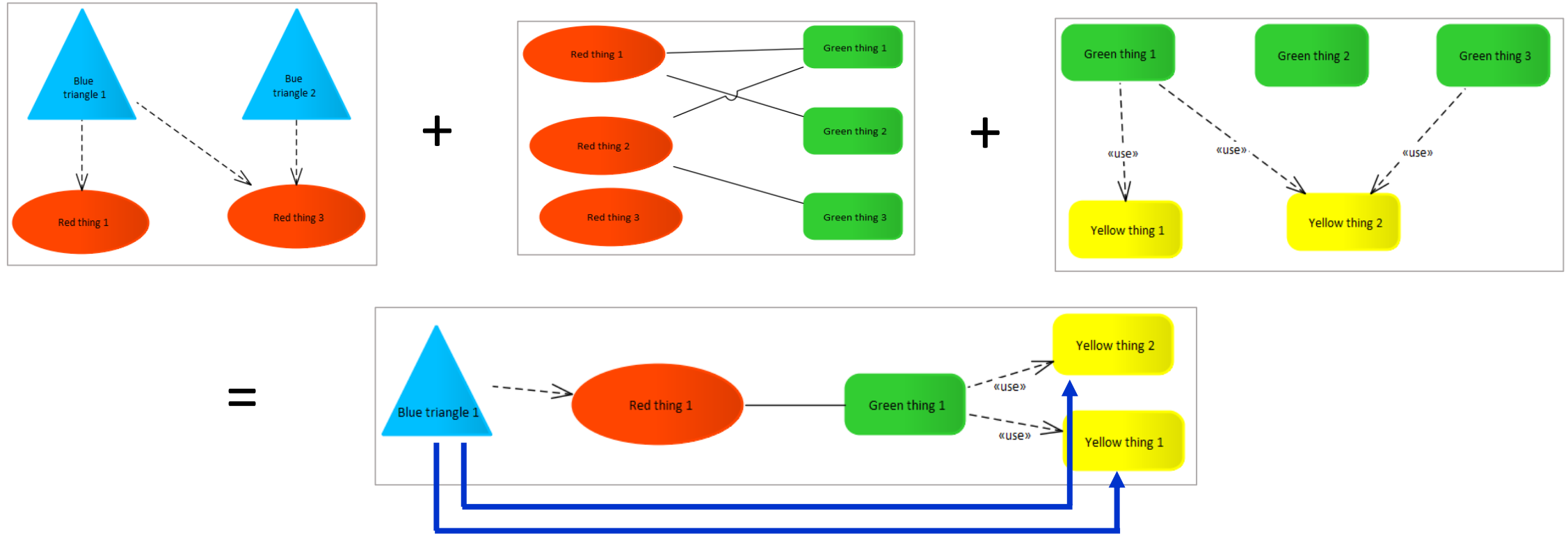
Properties

Connector Source Target Constraints **Tags**

Dependency	
approval date	2/9/2021
approval conditions	subject to validation of #39456
Authorisation code	GH57

If you start overloading a connector with lots of tagged values, maybe it's really a separate 'thing'

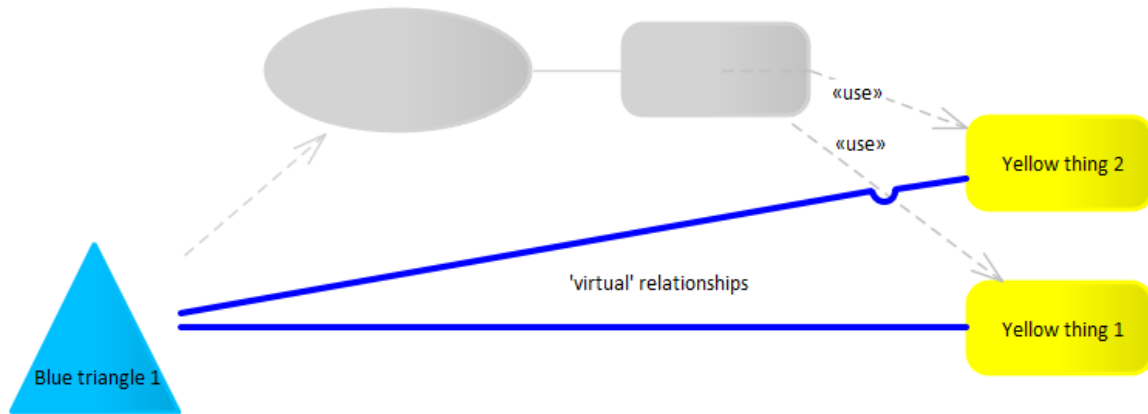
# 6. Virtual relationships



The Best Thing About EA..

...but 'virtual relationships' don't exist in EA

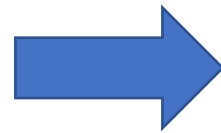
# 6. Virtual relationships



- Conceptually, there is a relationship between the two elements.
- No implementation in EA 😞 (@Sparx please?)

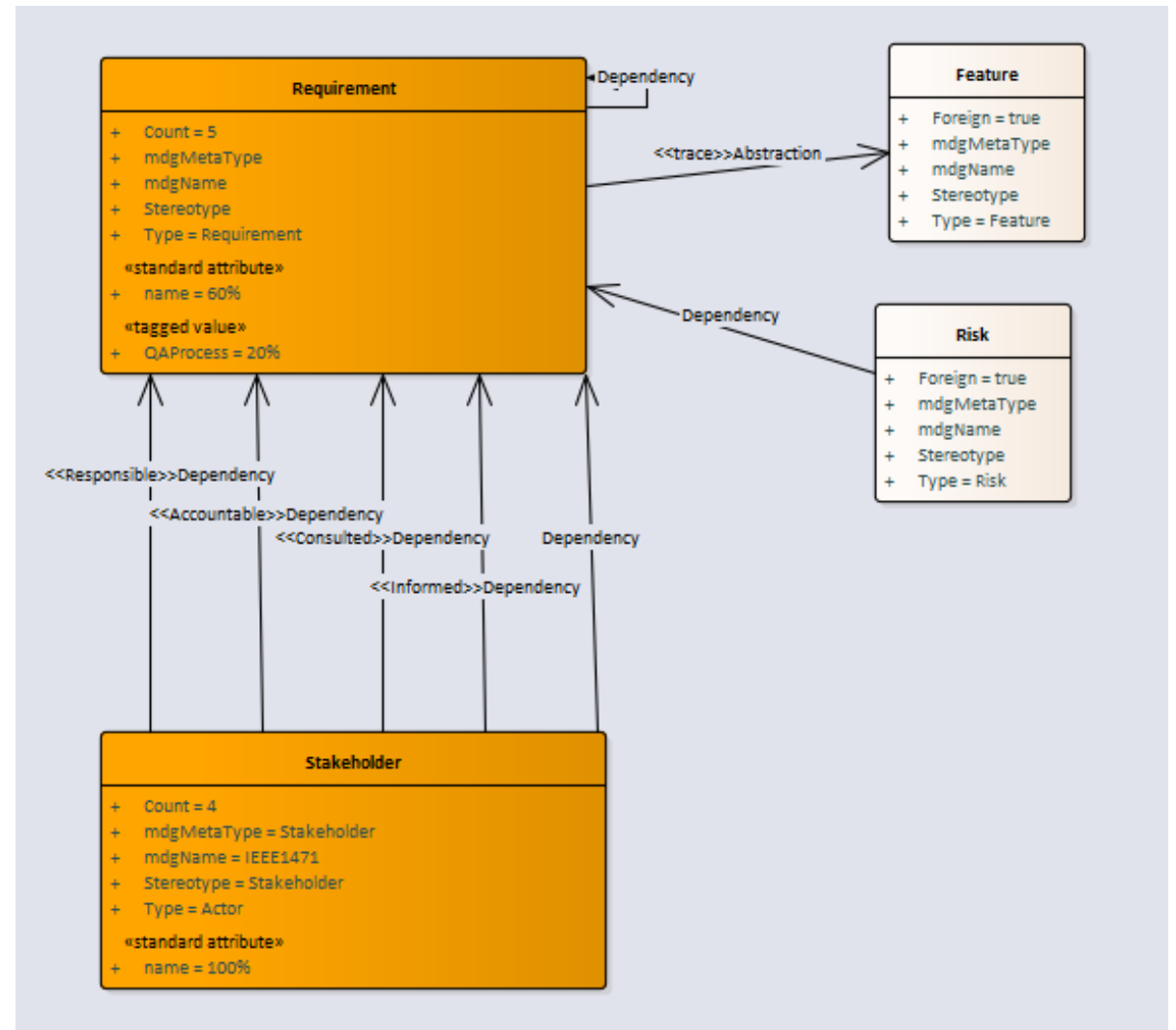
Consistent = **HARD WORK.**

# Maintaining consistency



## Shows you:

- Types of element
- Types of connector
- How many of each
- ..then allows you to FIX errors



Free download – unlimited analysis of your models: [www.eaModelExpert.com](http://www.eaModelExpert.com)

# To get VALUE from traceability:

- MODEL must be consistent
- OUTPUTS must be useful\*

\* Useful to the consumer of the information

# Getting VALUE from relationships

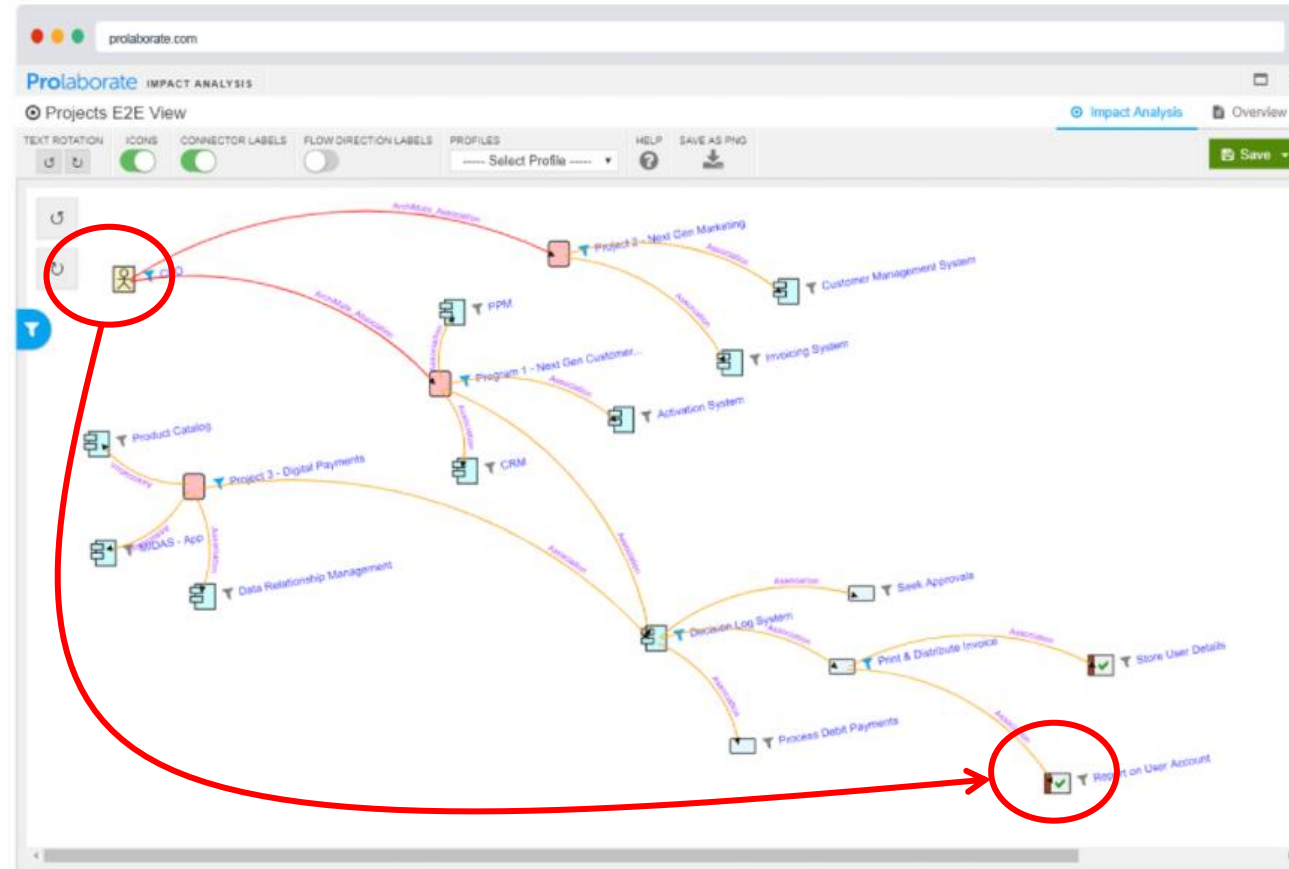
## 1 – EA “Traceability” view

### EA Experts view

The screenshot displays the Enterprise Architect interface. The ribbon at the top contains various toolbars and tabs. The 'Traceability' icon, represented by a grid of squares, is highlighted with a red box. A red arrow points from this icon to the 'Traceability' view pane on the left. The 'Traceability' view shows a hierarchical tree structure of relationships. The root node is 'Requirement1', which is expanded to show its 'needed by' relationships. These include 'Stakeholder 1' through 'Stakeholder 4', and 'Risk1'. 'Risk1' is further expanded to show its 'needed by' relationship with 'Stakeholder 5'. 'Stakeholder 5' is expanded to show its 'depends on' relationships with 'Risk1' and 'Risk2'. 'Risk2' is expanded to show its 'needed by' relationship with 'Requirement 42'. Other nodes in the tree include 'Feature1', 'Feature2', 'Requirement2', and 'Tagged Value References' with a sub-item '(QAProcess) BusinessProcess1'.

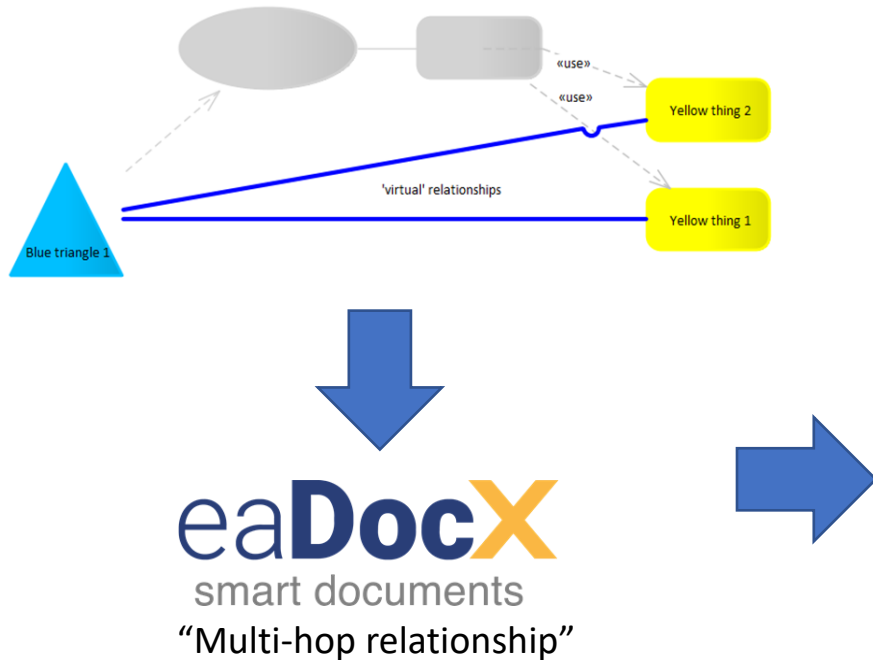
# Getting **VALUE** from relationships

## 2 – Prolaborate “Impact Analysis View”



# Getting VALUE from relationships

## 3 – Documentation



### 4.3 - Blue and Yellow

Here is a table of blue things and their related yellows.

Blue things	Related yellow things
Blue triangle 1	<a href="#">Yellow thing 1</a> , <a href="#">Yellow thing 2</a>
Blue triangle 2	...
...	

Table 4.3.

Blue and yellow things are very interesting because...

### 4.4 – Yellow Things

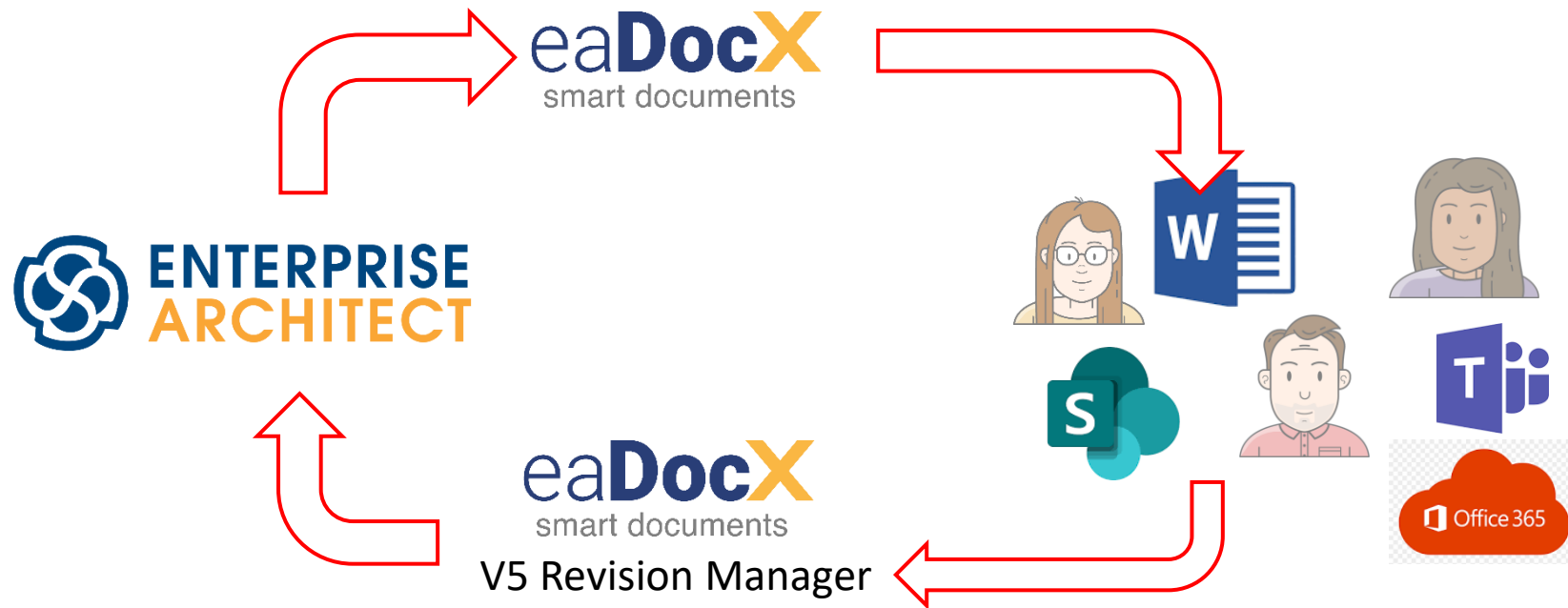
#### 4.4.1 Yellow Thing 1

...  
...

\*Other document generators are also available



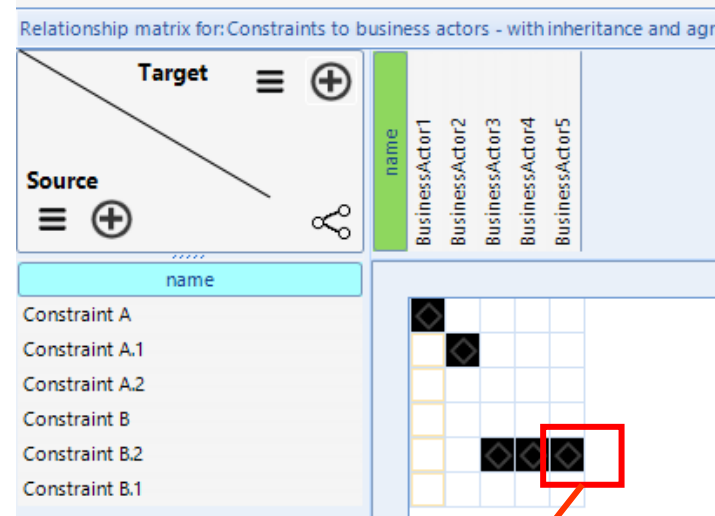
# Interactive eaDocX Documents



# Getting VALUE from relationships

## 4 – ModelExpert Advanced relationship matrix

- Can define and show virtual (“multi-hop”) relationships
- Understands clever things like inherited relationships



Shows there is a virtual relationship

# Ian's rules for connectors in manageable models

1. Re-use before you invent
2. Just use 'normal' connectors & first-class elements – avoid tagged-value, textual, and internal relationships if you can
3. Maintain consistency with **ModelExpert** or similar tools
4. Get VALUE from all your hard work using eaDocX documents or Prolaborate



[eaDocX.com](http://eaDocX.com)  
[eaModelExpert.com](http://eaModelExpert.com)

# Questions – Go to Teams