Bladed 5

10th November 2016

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Bladed 5

Presentation contents

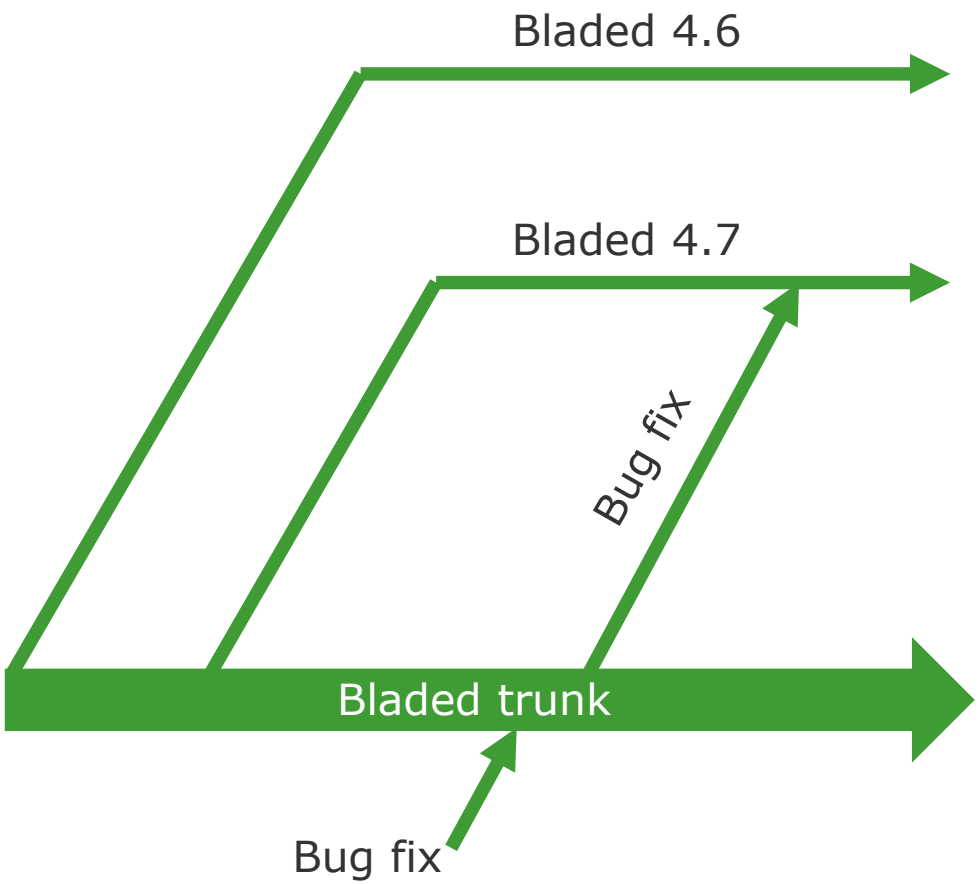
- My understanding of users concerns
- How Bladed is developed and managed
- Changes that we are making
- How this relates to Bladed 5

Key concerns from Bladed Users

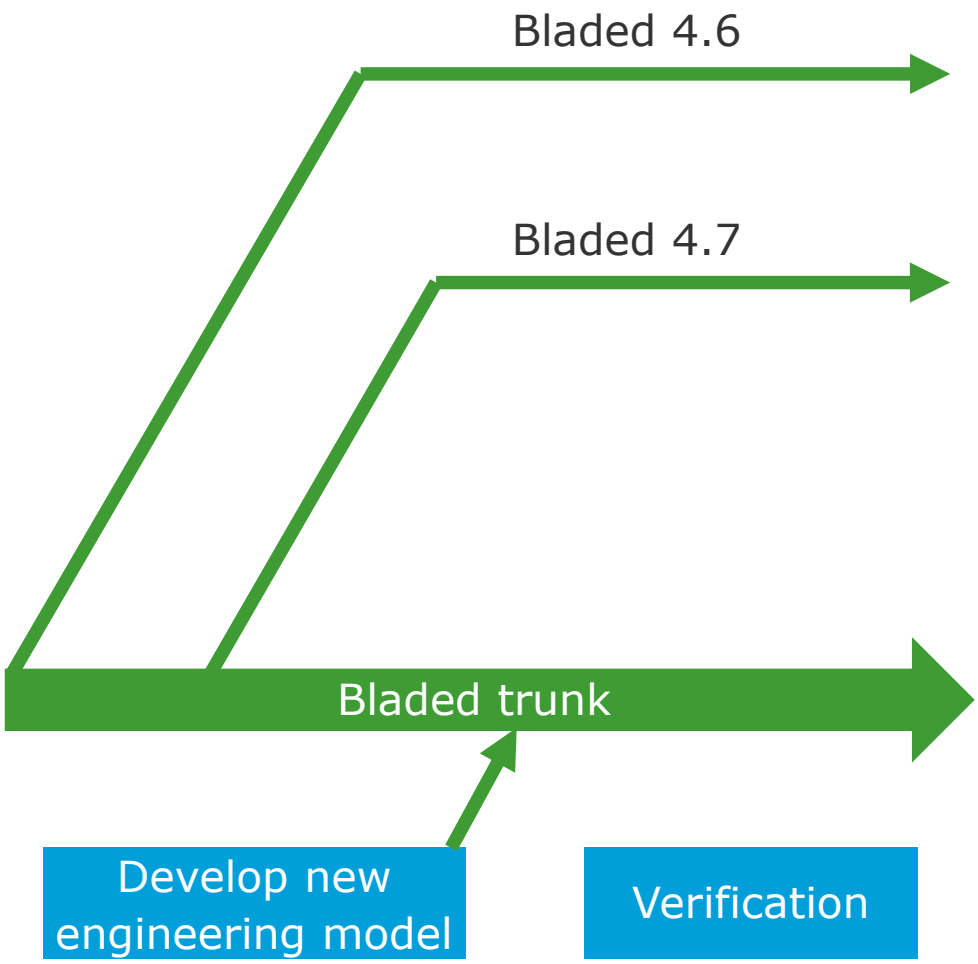
1. Engineering code quality - verification
2. Process improvement
   - Loadset management
   - Automation
   - Batch handling
   - Post-processing
   - Data viewer
3. Ability to deliver small engineering model extensions
4. Results differences in different versions of the code

Can better version management be part of the answer?

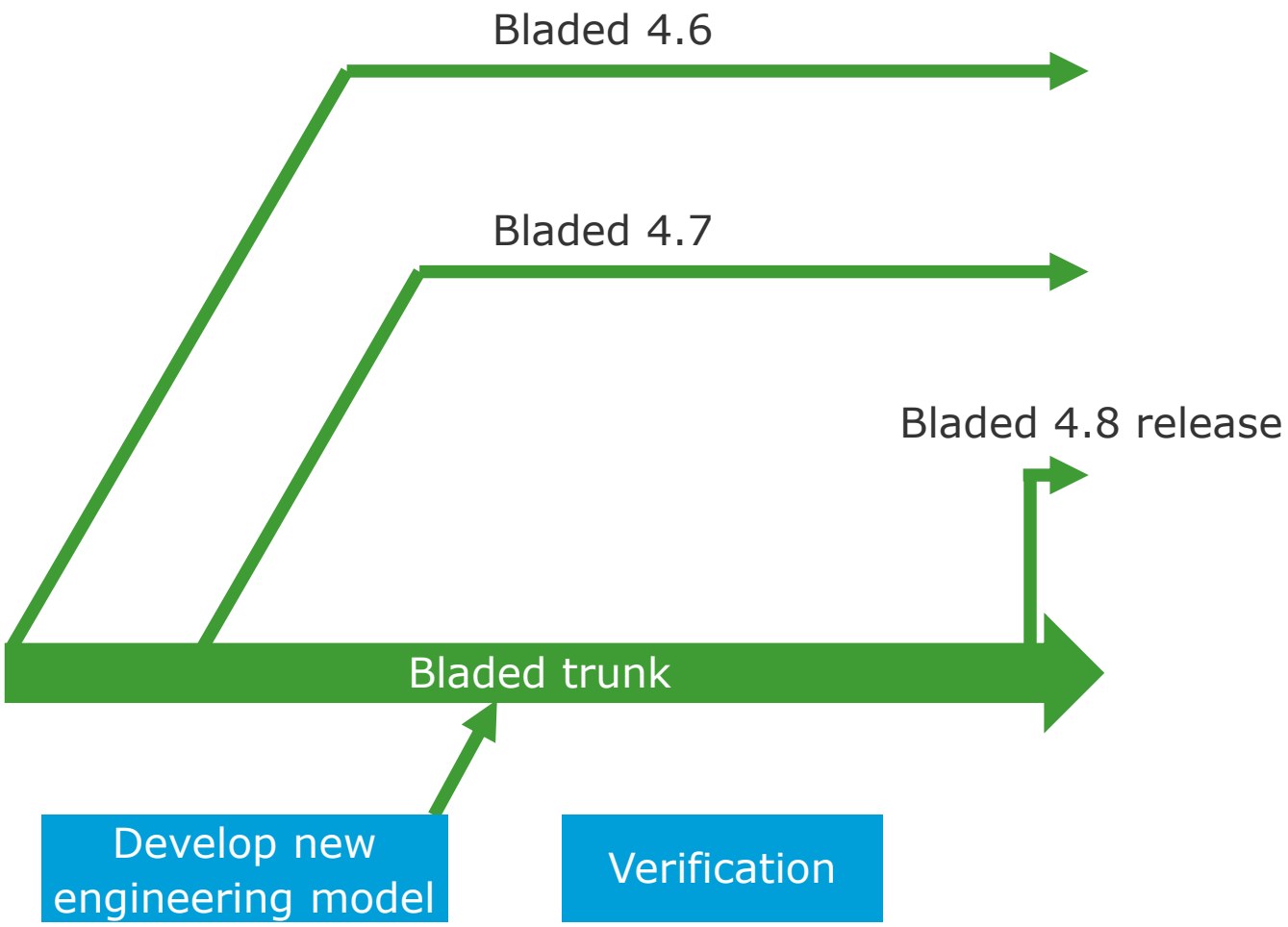
Bladed Version Management – Branching



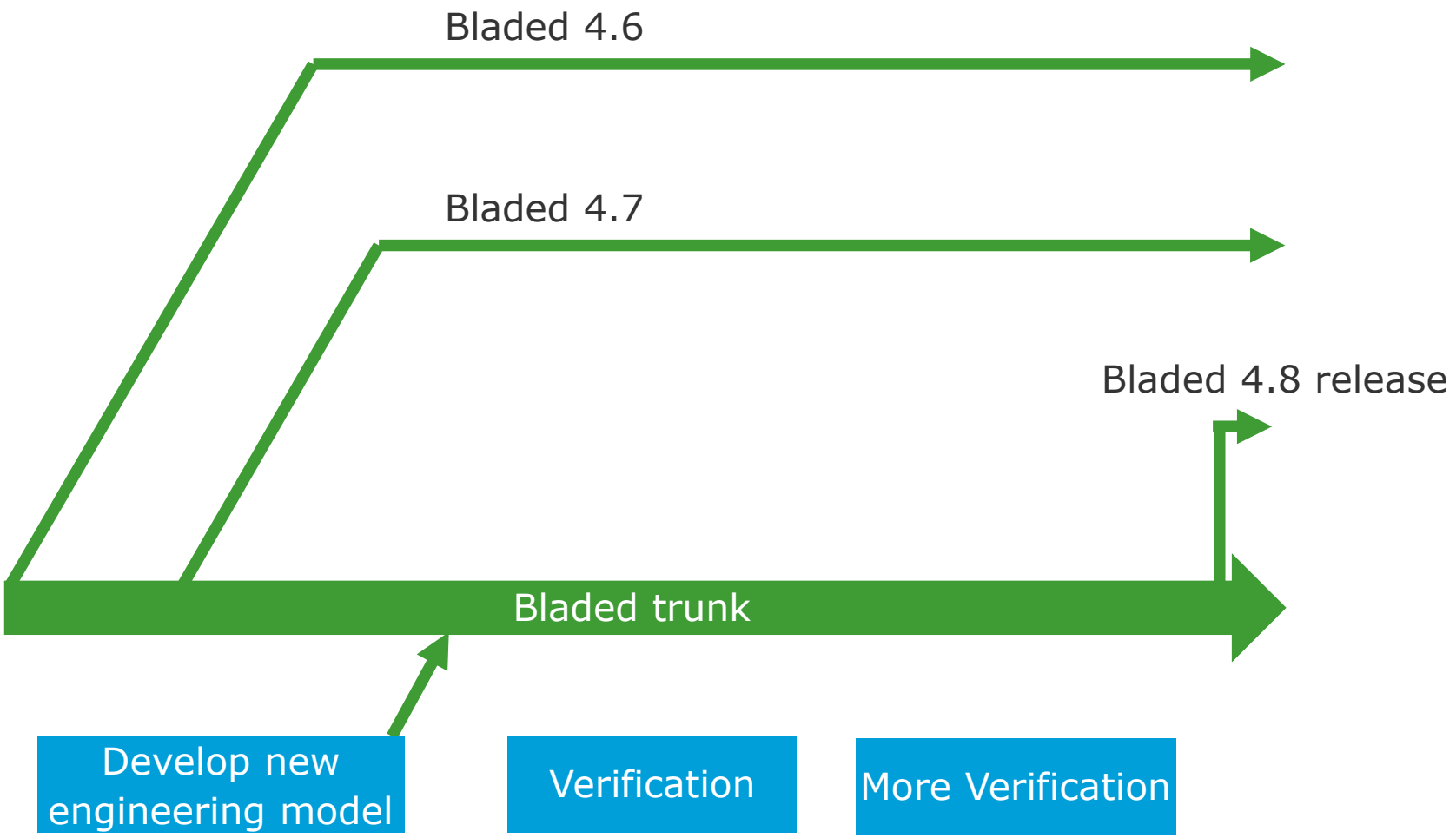
Bladed Version Management – Branching



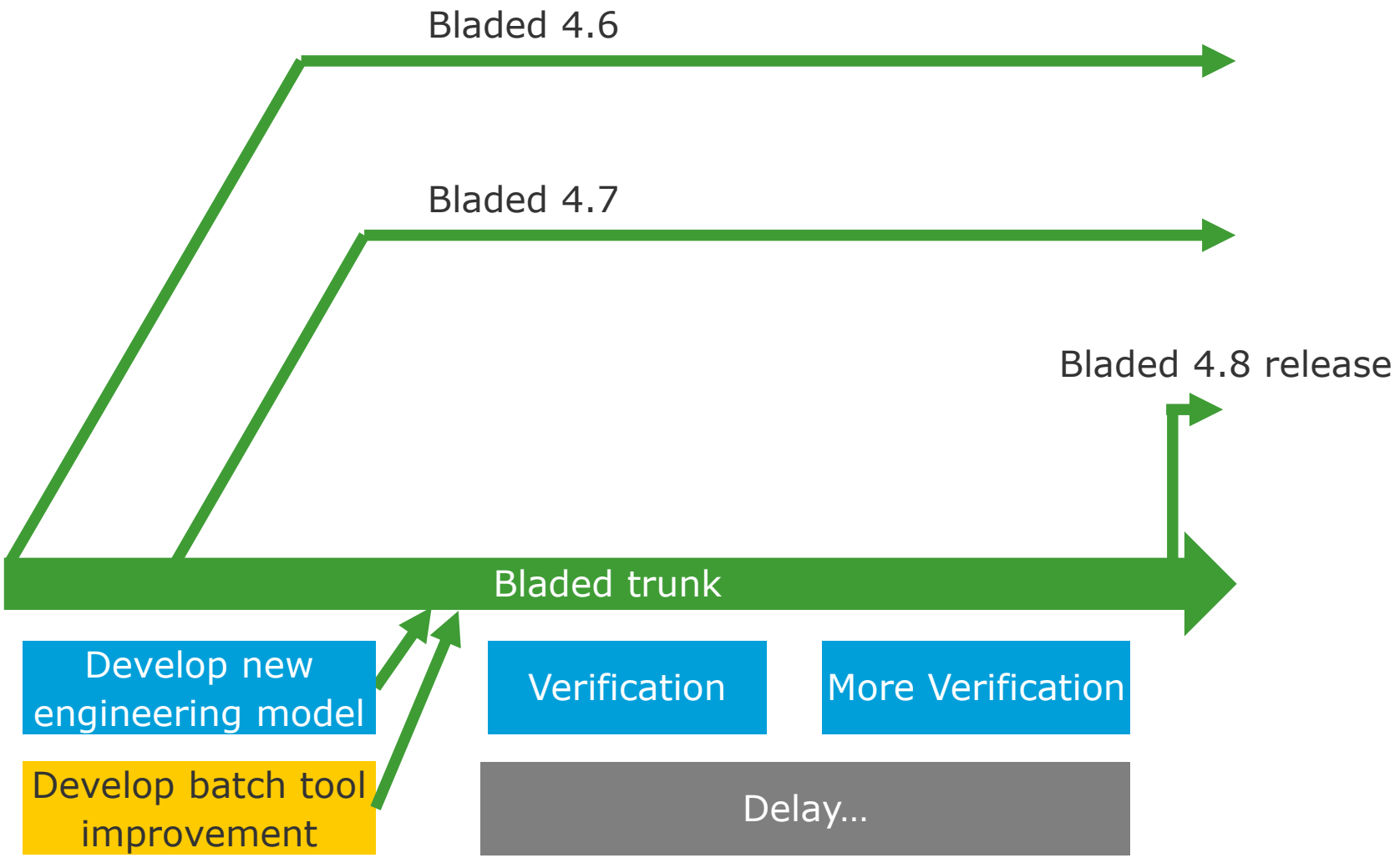
Bladed Version Management – Releasing



Bladed Version Management – Verification phase



Bladed Version Management – The constraints



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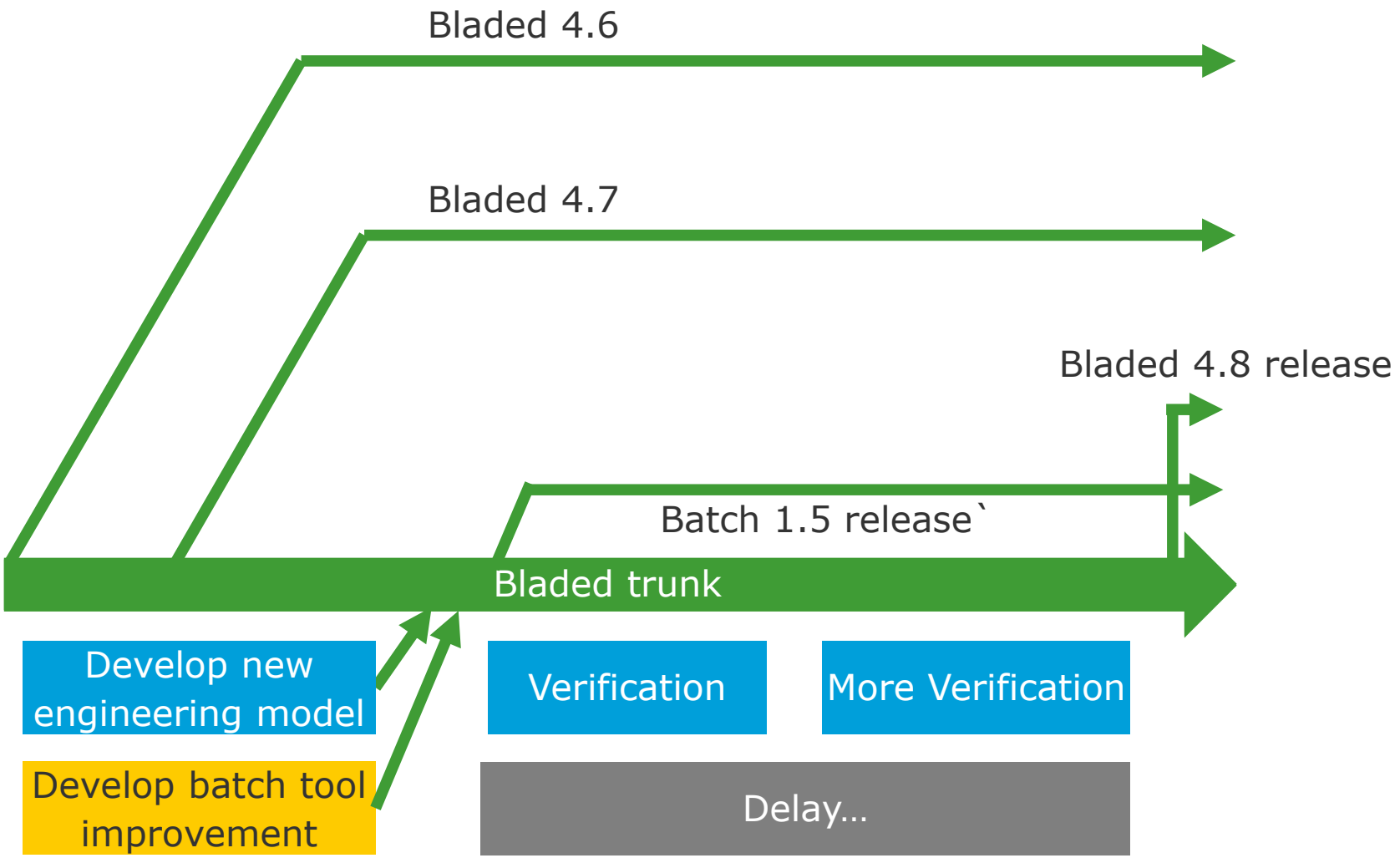
Bladed Version Management – Releasing modular tools



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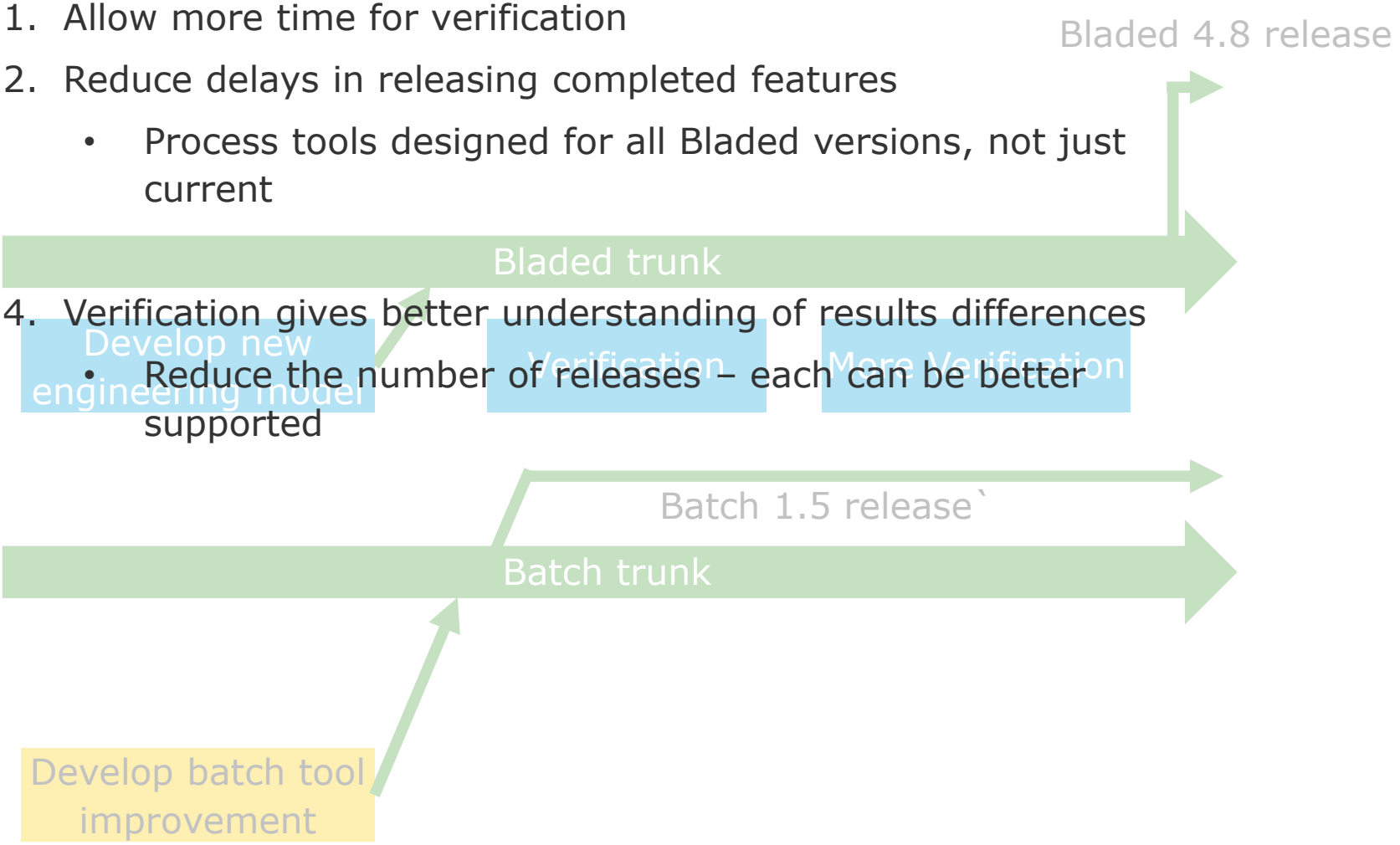
Key concerns from Bladed Users

1. Engineering code quality - verification
2. Process improvement
3. Ability to deliver small engineering model extensions
4. Results differences in different versions of the code

Can better version management be part of the answer?

Bladed Version Management – Benefits of separate modular releases

1. Allow more time for verification
2. Reduce delays in releasing completed features
   - Process tools designed for all Bladed versions, not just current



4. Verification gives better understanding of results differences
   - Reduce the number of releases – each can be better supported

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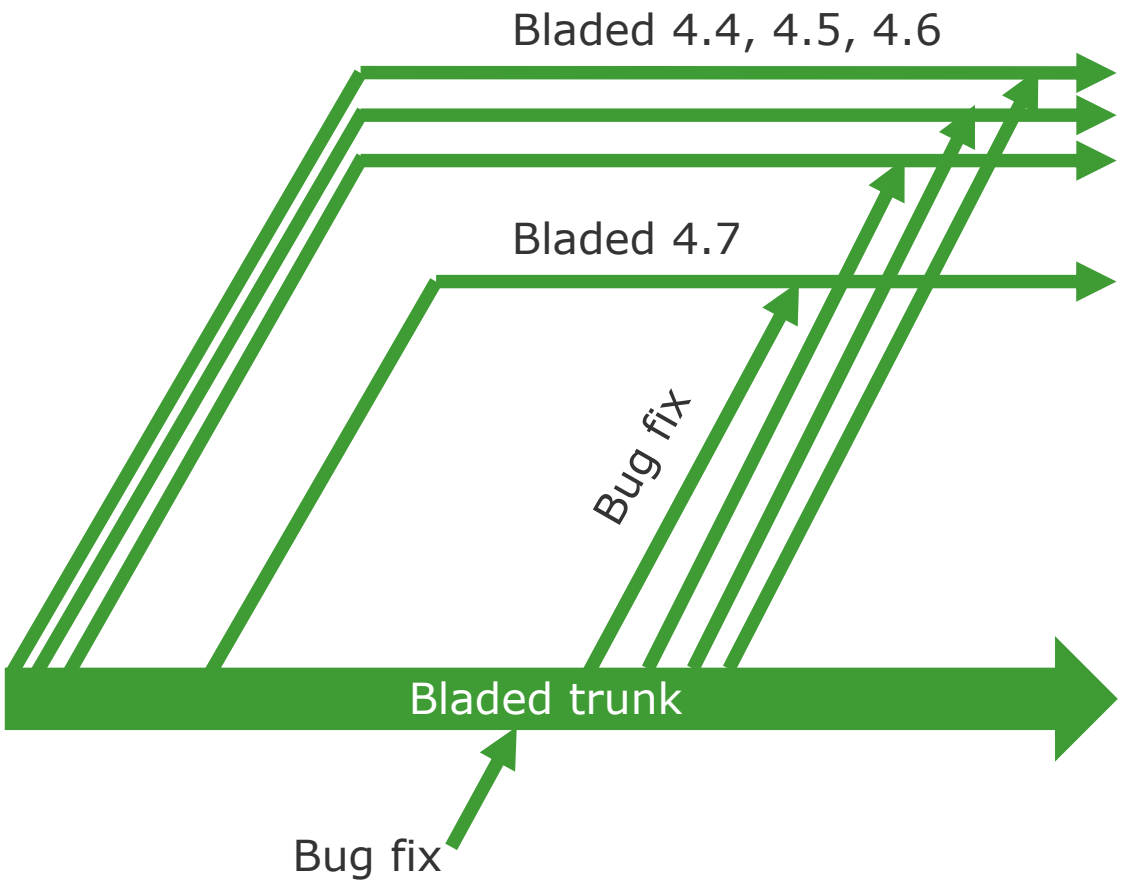
Bladed Version Management – Better supported branches



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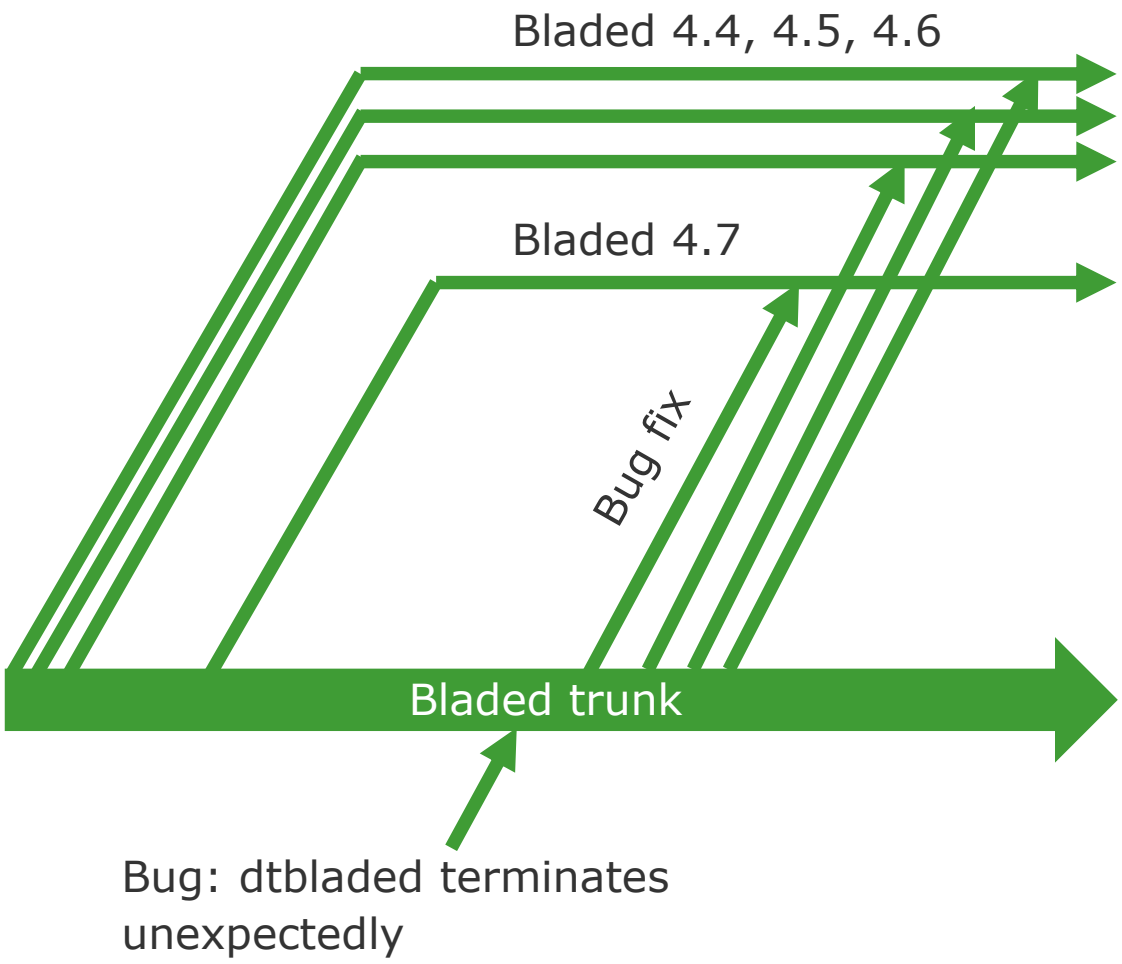
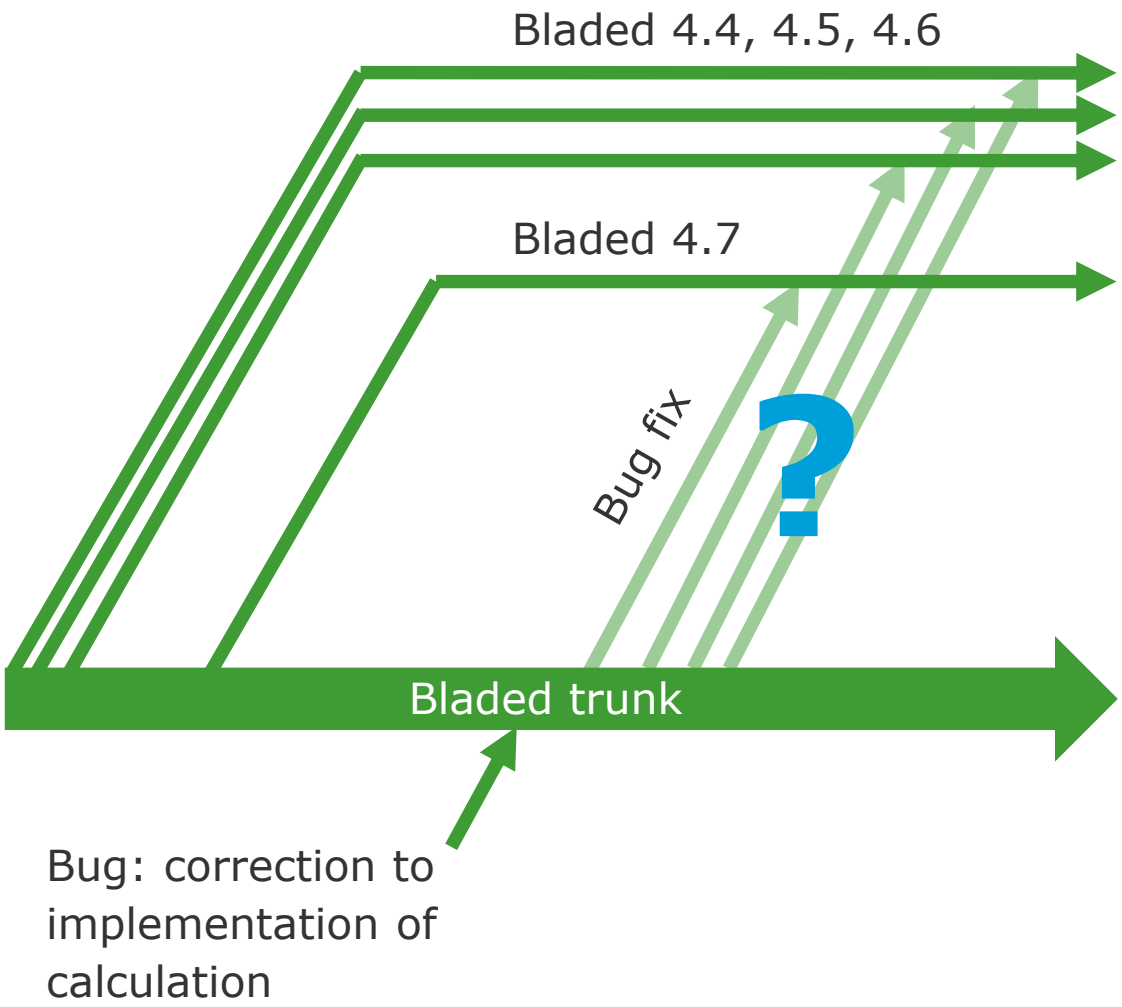
Bladed Version Management – Better supported branches



Bladed Version Management – Better supported branches



- To maintain consistent results, some defects should be left alone
- Consistency of results should be verified

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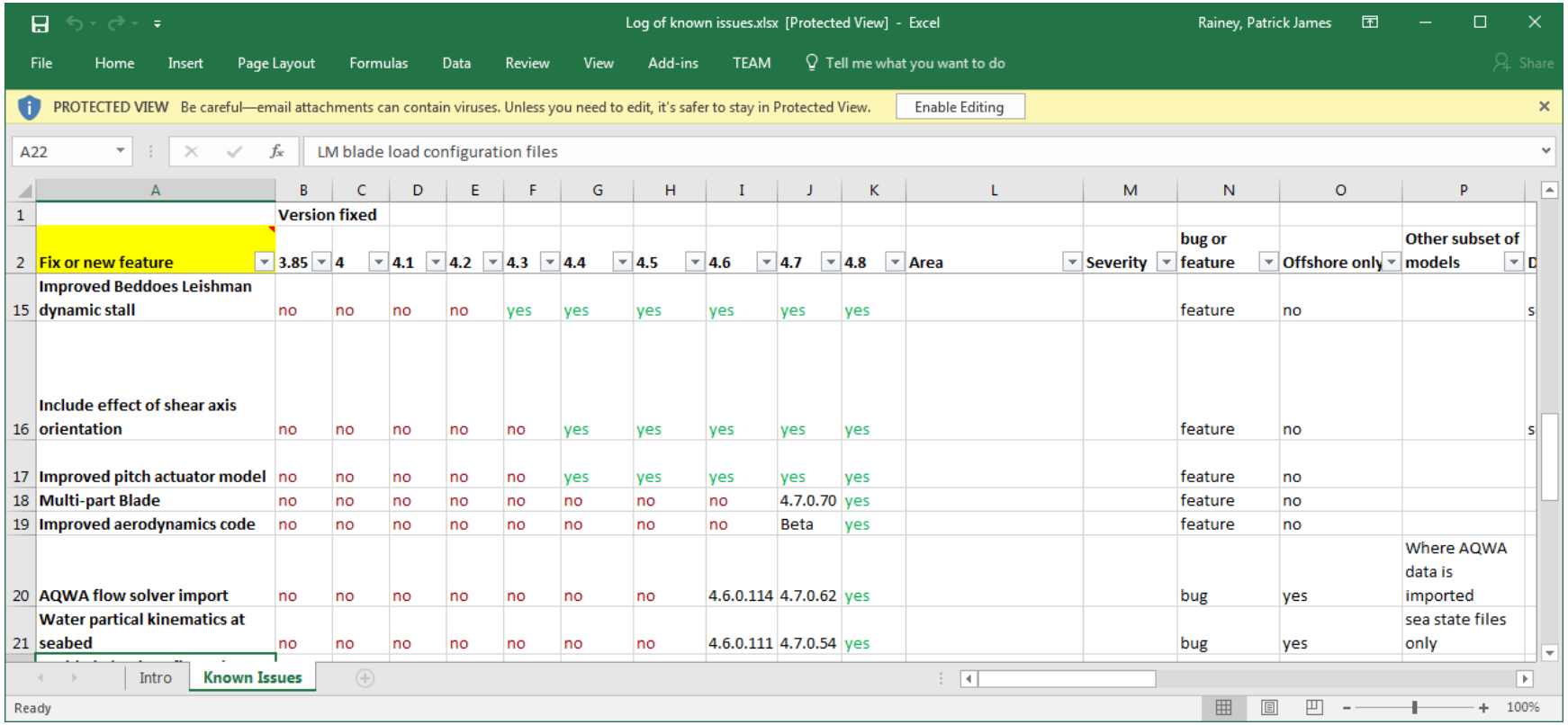
Causes for change in results better documented



Log of known issues.xlsx [Protected View] - Excel — Rainey, Patrick James

File Home Insert Page Layout Formulas Data Review View Add-ins TEAM Tell me what you want to do — Share

PROTECTED VIEW Be careful—email attachments can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing

A22 — LM blade load configuration files

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1		Version fixed														
2	Fix or new feature	3.85	4	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	Area	Severity	bug or feature	Offshore only	Other subset of models
15	Improved Beddoes Leishman dynamic stall	no	no	no	no	yes	yes	yes	yes	yes	yes			feature	no	
16	Include effect of shear axis orientation	no	no	no	no	no	yes	yes	yes	yes	yes			feature	no	
17	Improved pitch actuator model	no	no	no	no	no	yes	yes	yes	yes	yes			feature	no	
18	Multi-part Blade	no	no	no	no	no	no	no	no	4.7.0.70	yes			feature	no	
19	Improved aerodynamics code	no	no	no	no	no	no	no	no	Beta	yes			feature	no	
20	AQWA flow solver import	no	no	no	no	no	no	no	4.6.0.114	4.7.0.62	yes			bug	yes	Where AQWA data is imported
21	Water partical kinematics at seabed	no	no	no	no	no	no	no	4.6.0.111	4.7.0.54	yes			bug	yes	sea state files only

Intro | Known Issues

Ready — 100%

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Better supported branches – Engineering code additions

- Multi-part Blade was merged down to 4.7
- Pre- and post-processing will be compatible with previous versions
- More verification of consistency of results enables adding engineering code
  - There is an overhead with merging code

Take a step back

Fewer new version releases

More delivered to existing releases

-> We can afford to be more radical with the next new version

Key concerns from Bladed developers

- Prefer code that is built using the latest best practice
- Prefer code that uses the latest technology
- Prefer coding using the latest coding tools

- They want to be able to extend the code quickly and with low risk
  3. Ability to deliver small engineering model extensions

- This motivates modernising the current UI

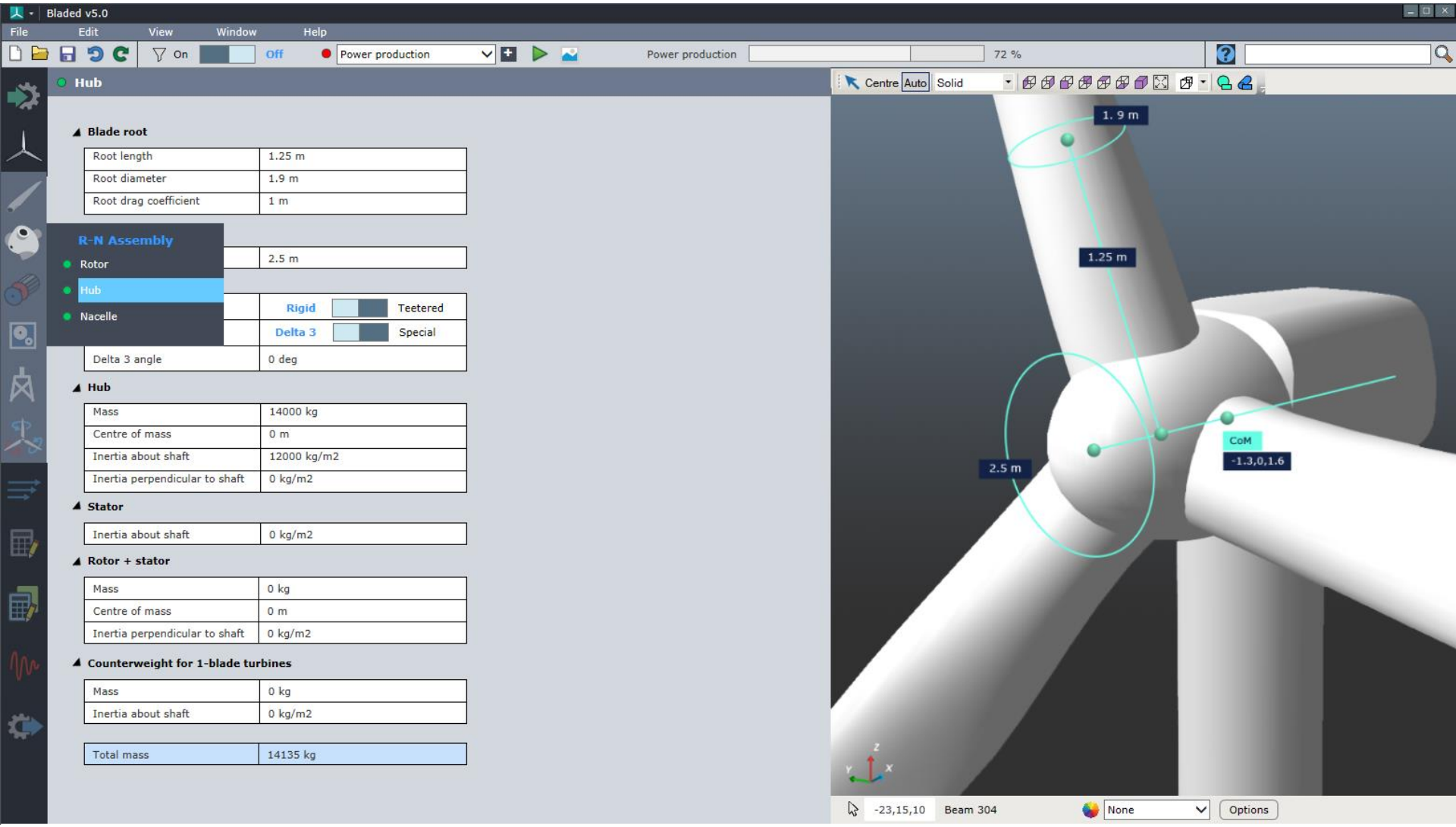
The Bladed 5 design

- Based on the .NET, WPF
- Data model driven design

- Bladed hasn't had a separation between the data model and the VB6 GUI
- That's why it is slow in create a batch from existing runs
  - Only the VB6 *graphical* user interface knew how to convert from a $pj to a .in file

- Based on UX lead design presented in previous conference by Matt Corrall

The Bladed 5 design



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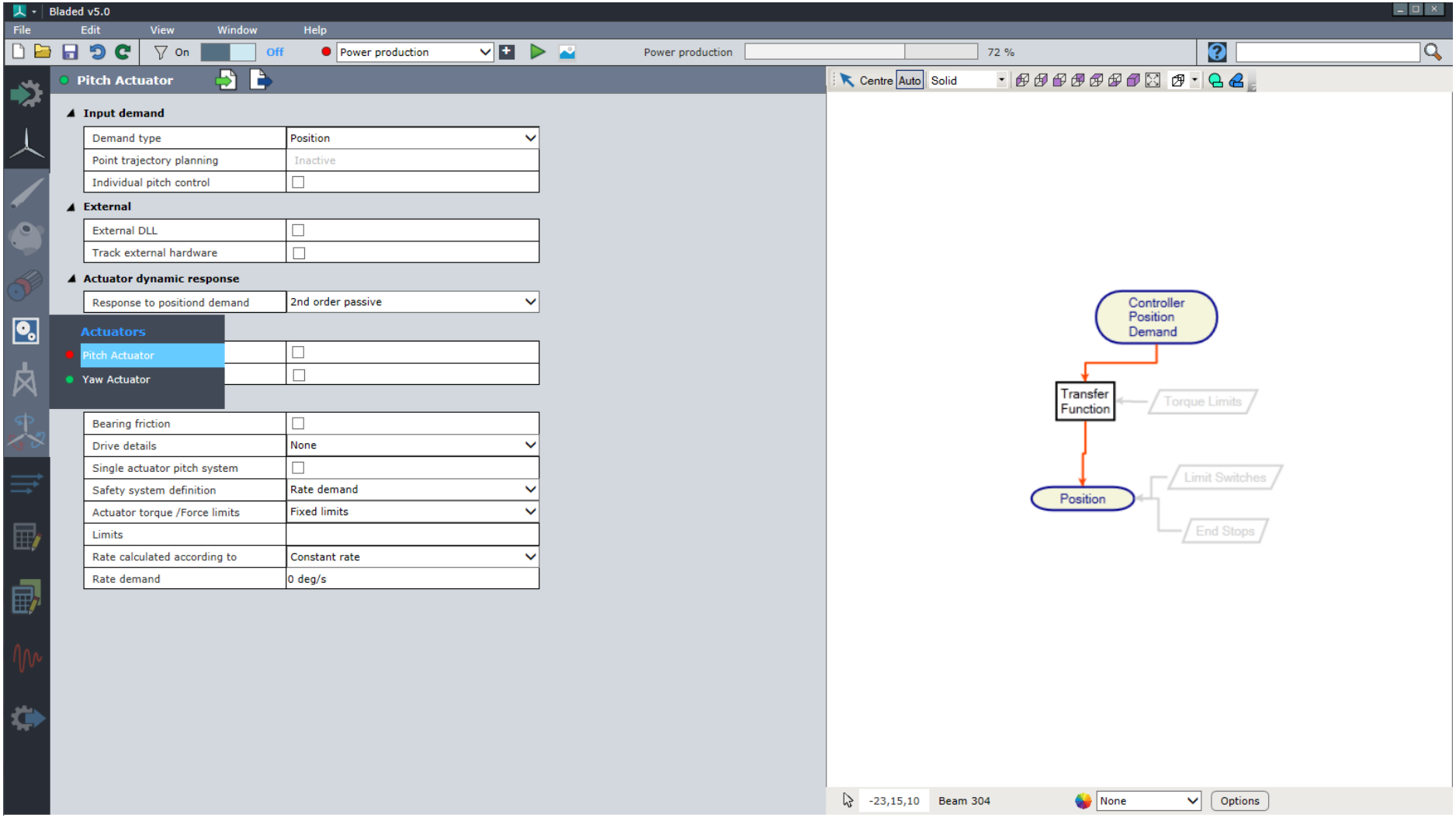
The Bladed 5 design



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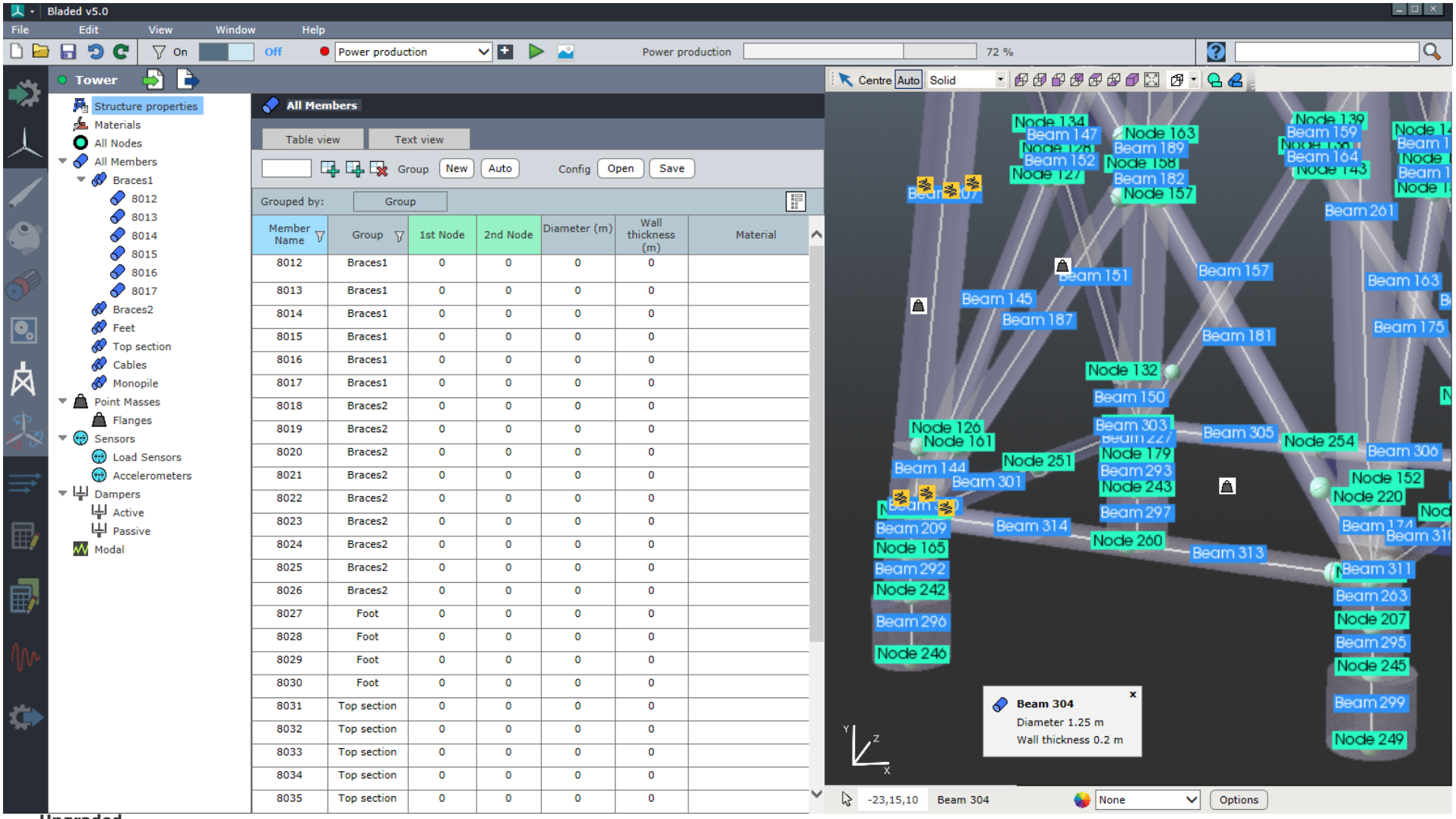

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The Bladed 5 Design