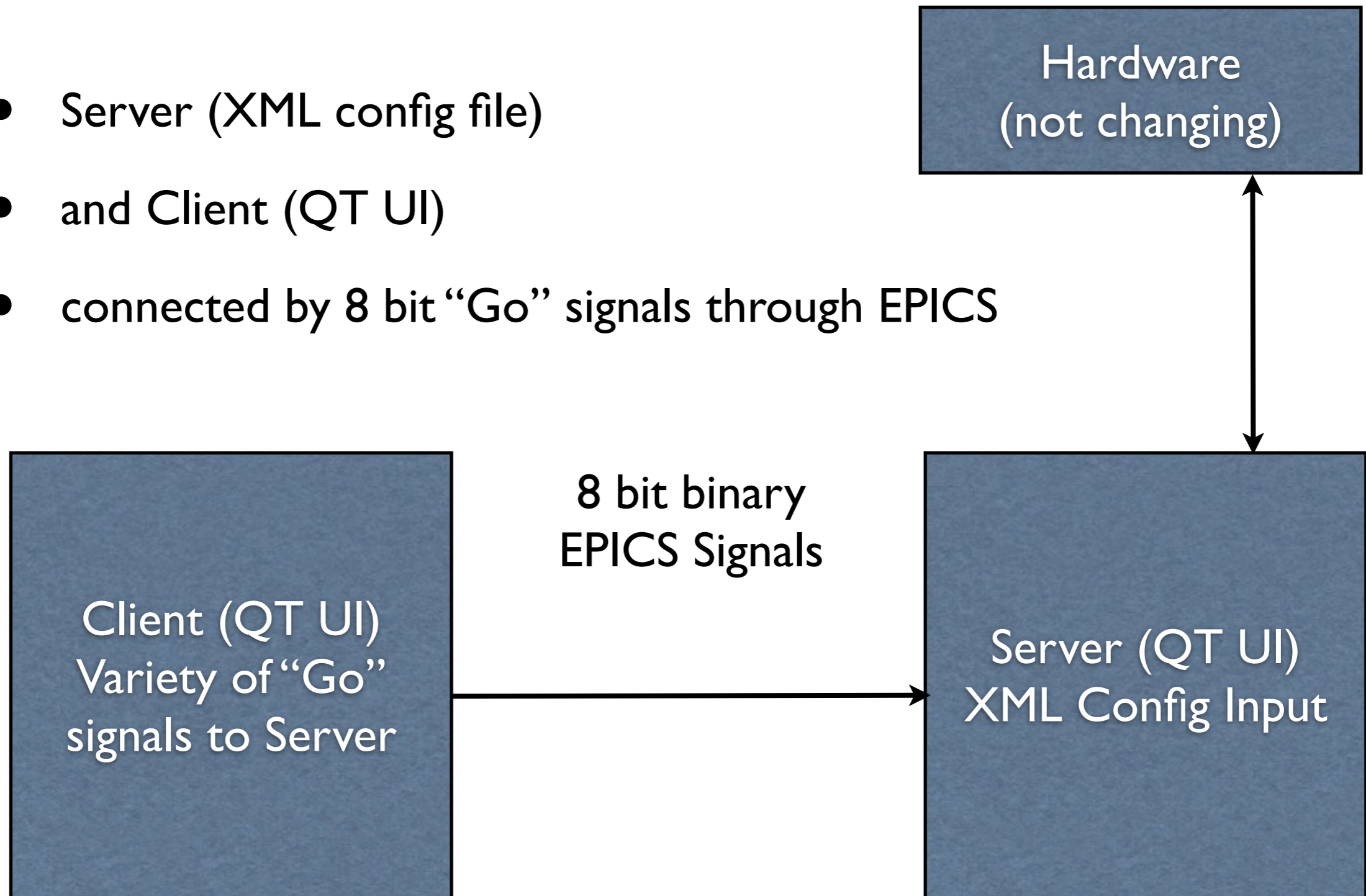


Tracker AFE Programmer

Structure

- Server (XML config file)
- and Client (QT UI)
- connected by 8 bit “Go” signals through EPICS

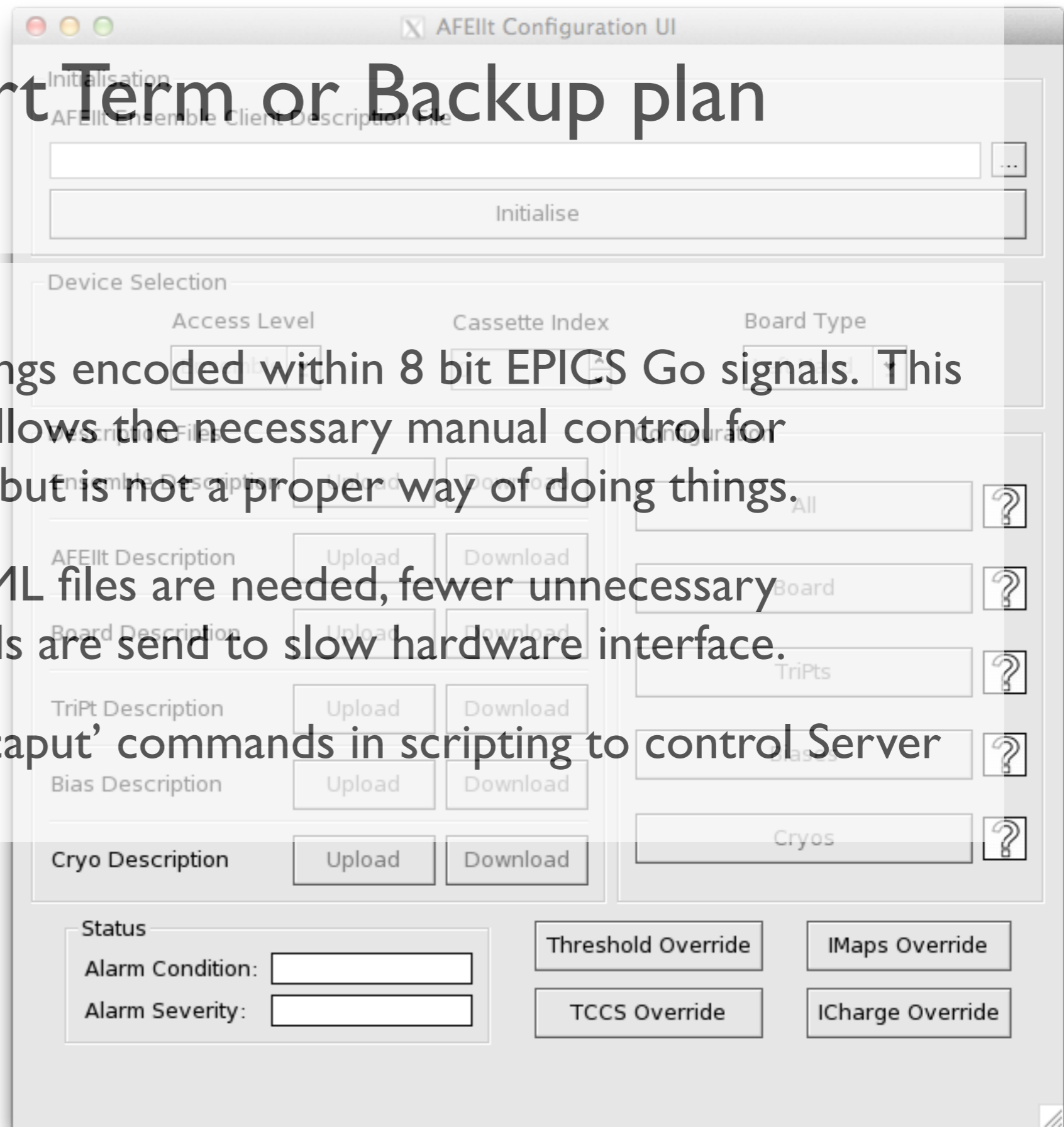


Problems

- Hardware communication is slow. Can't fix it, must optimise for it.
- David wants to make small adjustments without defining a new XML file. Mainly for calibrations.
 - Only those settings should be applied without reprogramming a large chunk of the system.
- Tracker AFE Programmer mixed in with Target and Menu code.
- Use of XML files for config is a pain.
- EPICS compliance of the system is weak.
- Need to script system for calibrations

Short Term or Backup plan

- Manual settings encoded within 8 bit EPICS Go signals. This works and allows the necessary manual control for calibrations, but is not a proper way of doing things.
- Fewer XML files are needed, fewer unnecessary commands are sent to slow hardware interface.
- Use EPICS 'caput' commands in scripting to control Server



Long term

- Settings stored in sqlite file or mysql database. Whichever is preferred
- Web interface (javascript)
- All internal interprocess communication through text commands over tcp so that they can be easily scripted.
- EPICS support through EDI, which has much better EPICS standards compliance.
- Single Web UI for everything: Temperatures, configuration, control &c.
- Server runs 24/7 and is only restarted to correct problems or install new versions

Database: **ERROR**

- Configuration
- Control
- Temperatures
- Base Hardware
- Board
- TriPt
- Bias
- Cryo
- Injection Maps (hex)
- Pipe Delays

New UI in development

	MCM 0	MCM 1	MCM 2	MCM 3	MCM 4	MCM 5	MCM 6	MCM 7	
TriPt 0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	All as First
TriPt 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	All as First

- Preamp Gains
- Opamp Gains
- Comparator Thresholds
- Comparator Reference Voltages
- Preamp Drive Currents
- Preamp Feedback Control IFFs

	MCM 0	MCM 1	MCM 2	MCM 3	MCM 4	MCM 5	MCM 6	MCM 7	
TriPt 0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	All as First
TriPt 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	All as First

- Time Circuit Current Sources
- Opamp Feedback Controls
- Comparator Drive Currents
- Opamp Drive Currents

	MCM 0	MCM 1	MCM 2	MCM 3	MCM 4	MCM 5	MCM 6	MCM 7	
TriPt 0	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	All as First
TriPt 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	All as First

Charge Injection Levels (hex)

Database: **ERROR**

Configuration Control Temperatures
Base Hardware Board **TriPt** Bias Cryo
Injection Maps (hex)

New UI in development

MCM 0 MCM 1 MCM 2 MCM 3 MCM 4 MCM 5 MCM 6 MCM 7

TriPt 0

TriPt 1

Pipe Delays

MCM 0 MCM 1 MCM 2 MCM 3 MCM 4 MCM 5 MCM 6 MCM 7

TriPt 0

TriPt 1

Preamp Gains

Opamp Gains

MCM 0 MCM 1 MCM 2 MCM 3 MCM 4 MCM 5 MCM 6 MCM 7

TriPt 0

TriPt 1

Comparator Thresholds

Comparator Reference Voltages

Preamp Drive Currents

MCM 0 MCM 1 MCM 2 MCM 3 MCM 4 MCM 5 MCM 6 MCM 7

TriPt 0

TriPt 1

Preamp Feedback Control IFFs

MCM 0 MCM 1 MCM 2 MCM 3 MCM 4 MCM 5 MCM 6 MCM 7

TriPt 0

TriPt 1

Time Circuit Current Sources

Opamp Feedback Controls

Comparator Drive Currents

MCM 0 MCM 1 MCM 2 MCM 3 MCM 4 MCM 5 MCM 6 MCM 7

TriPt 0

TriPt 1

Opamp Drive Currents

MCM 0 MCM 1 MCM 2 MCM 3 MCM 4 MCM 5 MCM 6 MCM 7

TriPt 0

TriPt 1

Analogous Target System

- Under testing in Sheffield.
- Major problems solved.
- Few weeks to full functionality.
- Hardware layer completely different, but user requirements very similar

Target Settings DB Interface

(Tracker one will be bigger, but scaling not a problem)

An arbitrary number of configuration combinations can be defined and retrieved in the database from the web interface

Activity: ● PNG

Target Position
Beam Intensity
Summed Sector 7 Loss
Summed Sector 8 Loss
Summed Total Loss
R7 VM2
R7 HM2
Integrated R7BLM3
Integrated R8BLM1

Analysis:
Minimum BCD: 32.8 mm

Consultation

- David and I are already in discussion.
- Any other thoughts?