System Integration Update

OUTLINE

- ✓ Reminder
- ✓ QFD and results
- ✓ Ideas and Issues

PACMAN internal meeting
01/09/2014
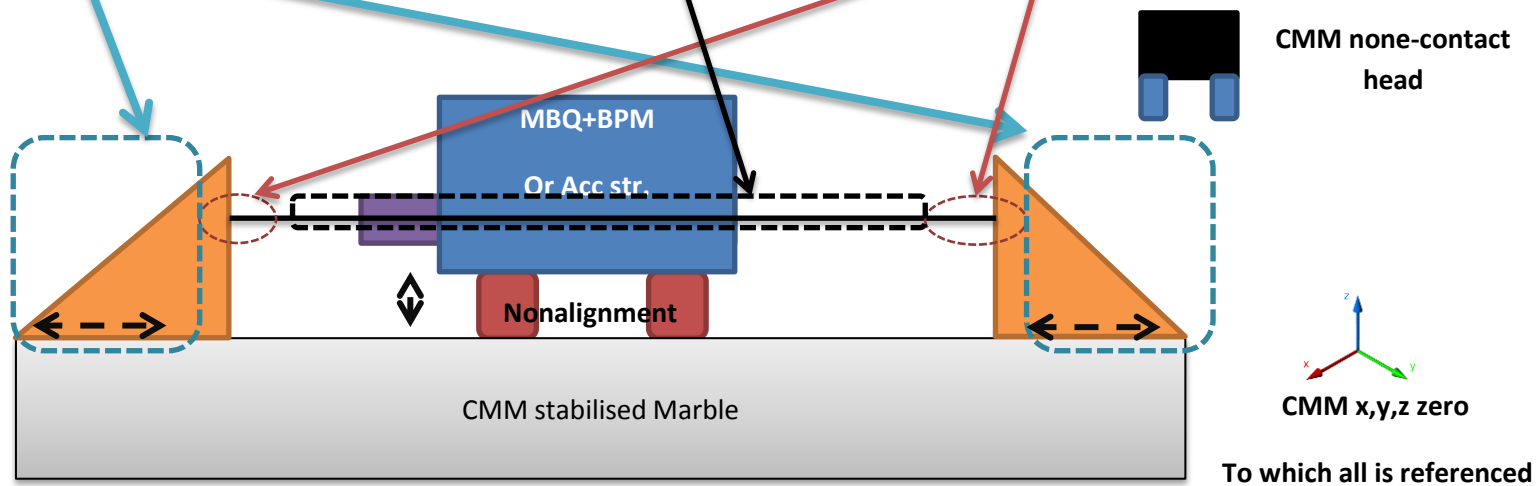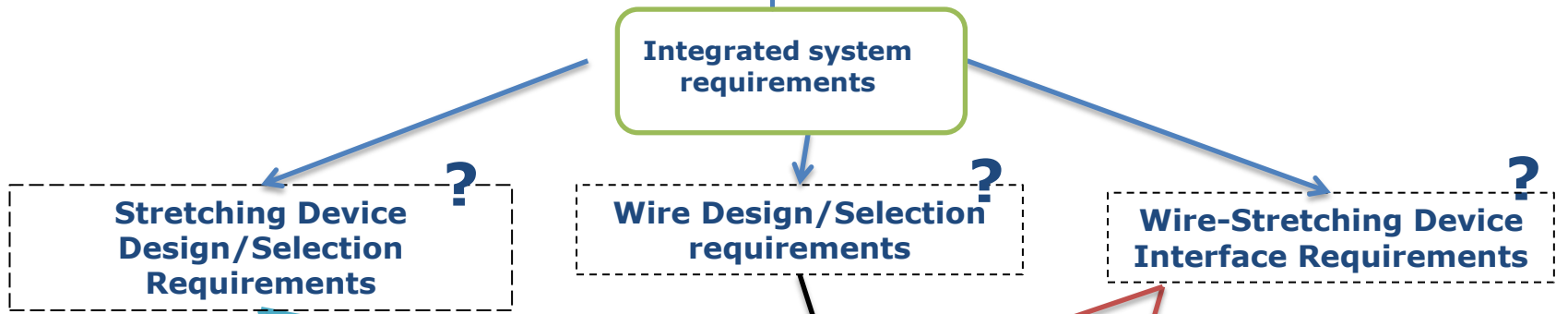
Iordan Doytchinov

System Integration

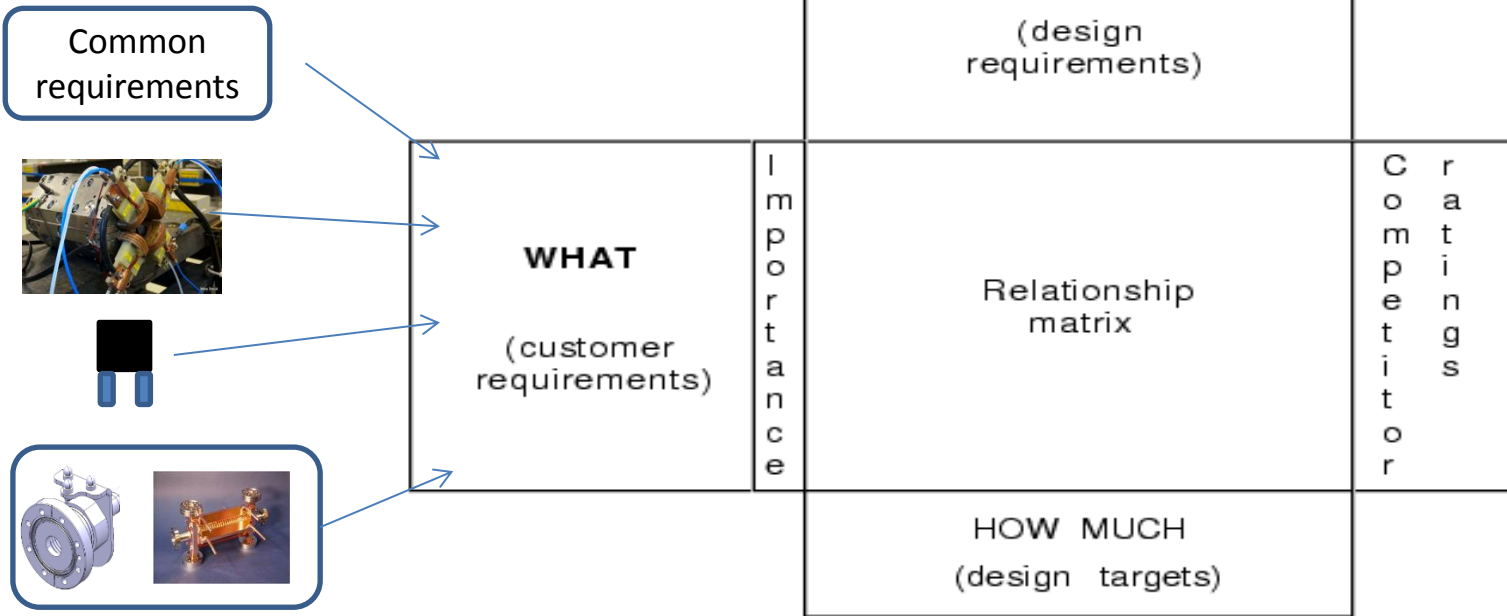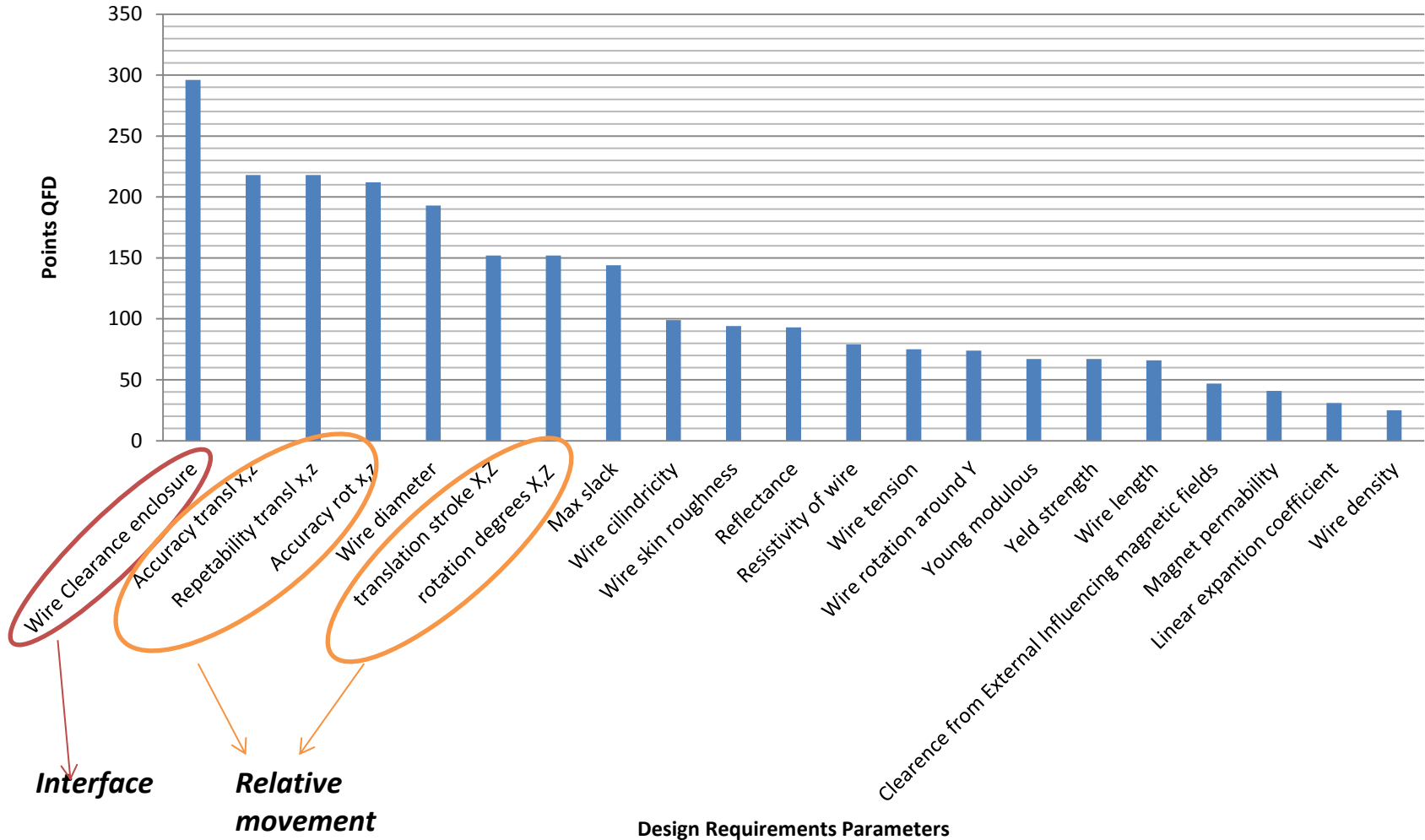# Sub system Requirements QFD

COUSTOMERS

Common requirements

QFD Importance of Parameters results

Chart: Y-axis labeled "Points QFD" ranging from 0 to 350. X-axis labeled "Design Requirements Parameters".

Bar values (approximate):
- Wire Clearance enclosure: ~297
- Accuracy transl x,z: ~218
- Repetability transl x,z: ~218
- Accuracy rot x,z: ~212
- Wire diameter: ~193
- translation stroke X,Z: ~152
- rotation degrees X,Z: ~152
- Max slack: ~144
- Wire cilindricity: ~99
- Wire skin roughness: ~94
- Reflectance: ~93
- Resistivity of wire: ~79
- Wire tension: ~76
- Wire rotation around Y: ~74
- Young modulous: ~67
- Yeld strength: ~67
- Wire length: ~66
- Clearence from External Influencing magnetic fields: ~47
- Magnet permability: ~41
- Linear expantion coefficient: ~31
- Wire density: ~25

Annotations:
- *Interface* (red circle → Wire Clearance enclosure)
- *Relative movement* (orange circles → Accuracy transl x,z / Repetability transl x,z / Accuracy rot x,z and translation stroke X,Z / rotation degrees X,Z)
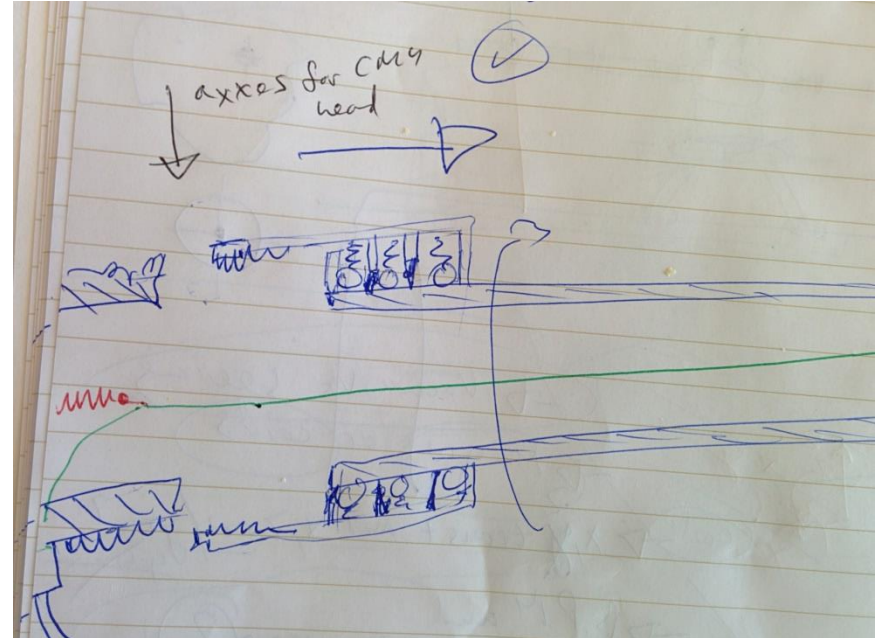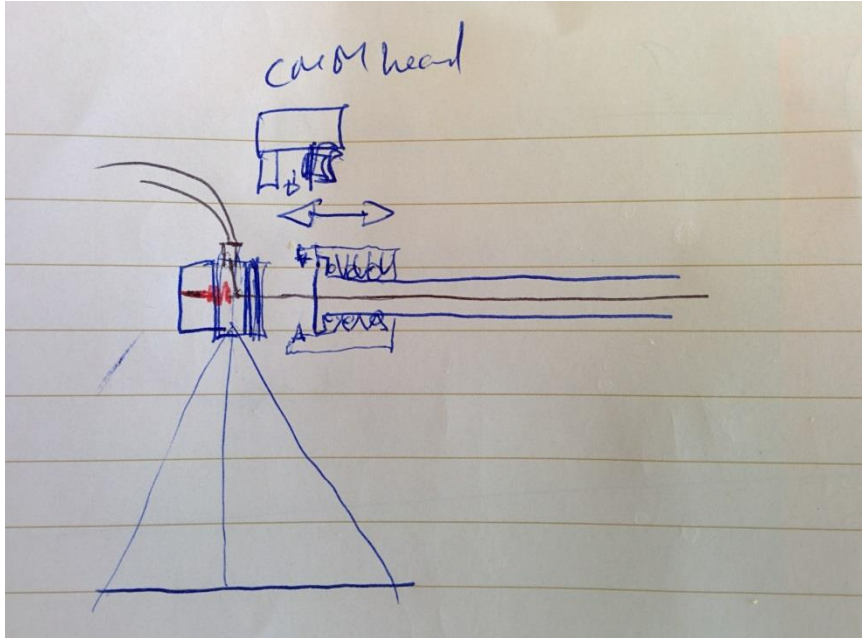
Issues, Ideas

❖ **Moving Magnet, BPM and Acc structure VS wire?**

❖ **General Coordinate system?**

❖ **DoF of translation and rotation?**

❖ **Vacuum VS 'Seeing': (Flange open close concept)**

❖ **Wire interface no requirement for accurate attachment.**

XYZ Right handed coordinate system with z in beam direction

CMM none-contact head

MBQ+BPM

Or Acc str.

ACC

Nonalignment

CMM stabilised Marble

CMM x,y,z zero
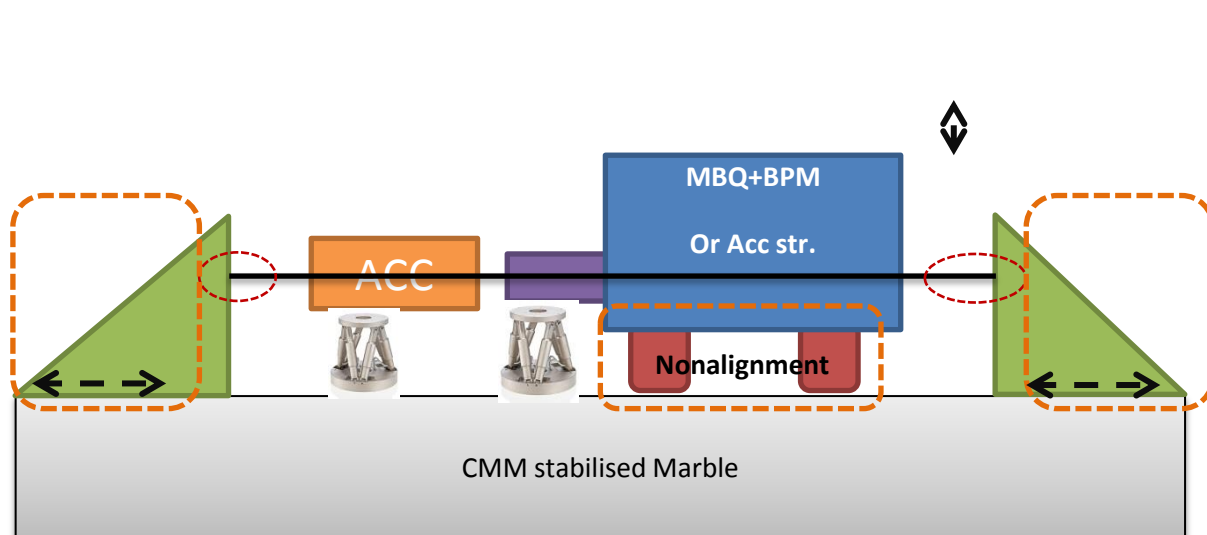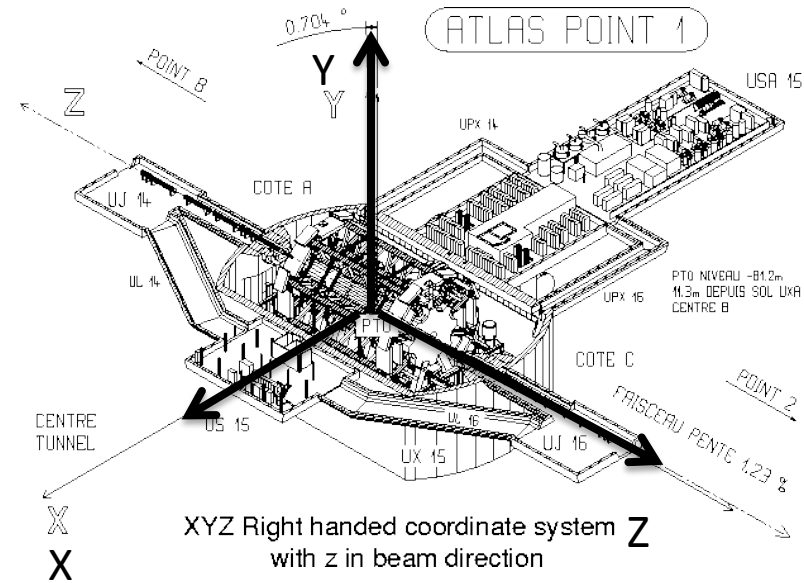
To which all is referenced

Sketch

Your Comments, Ideas... Thank you

Stretched Wire Setup