



Printing the Future: How additive manufacturing is transforming low volume automotive production



Welcome everyone...

Agenda: Housekeeping and introductions – Tony Flanagan

1. NAA update – Rowan Egan
 2. FDM Digital Solutions part 1 – Graeme Bond.
 3. Siemens NX Software– Neil Johnson
 4. Valuechain – Jim Walters
 5. HP Multijet Fusion – Maryam Qureshi
 6. FDM Digital Solutions part 2 – Graeme Bond.
 7. Made Smarter – Claire Scott
- Networking, Tour & Close around 4pm.

Our current production AM Technology

“Total design freedoms”

**“Manufacture what you want –
not how you can currently make it”**

“Big Tech”



1 x FORTUS 900MC
Thermoplastic FDM Filament.
Build Envelope 914 x 610 x 914

“Fast Tech”



1 X The new HP MJF
Multiple production
machines planned

“Versatile Tech”



4 - 400MC+2 - FORTUS 450MC
Thermoplastic FDM Filament.
Build Envelope 406 x 355 x 406
With higher temp ULTEM 1010

“Future Tech”



2 x New Roboze One + 400
Thermoplastic FDM Filament.
High performance materials
such as PEEK, Carbon PA
Build Envelope 300 x 200 x 200

Working in the supply chain.

Automotive / Motorsport



ASTON MARTIN



Aerospace



AIRBUS

BOMBARDIER



**Rockwell
Collins**

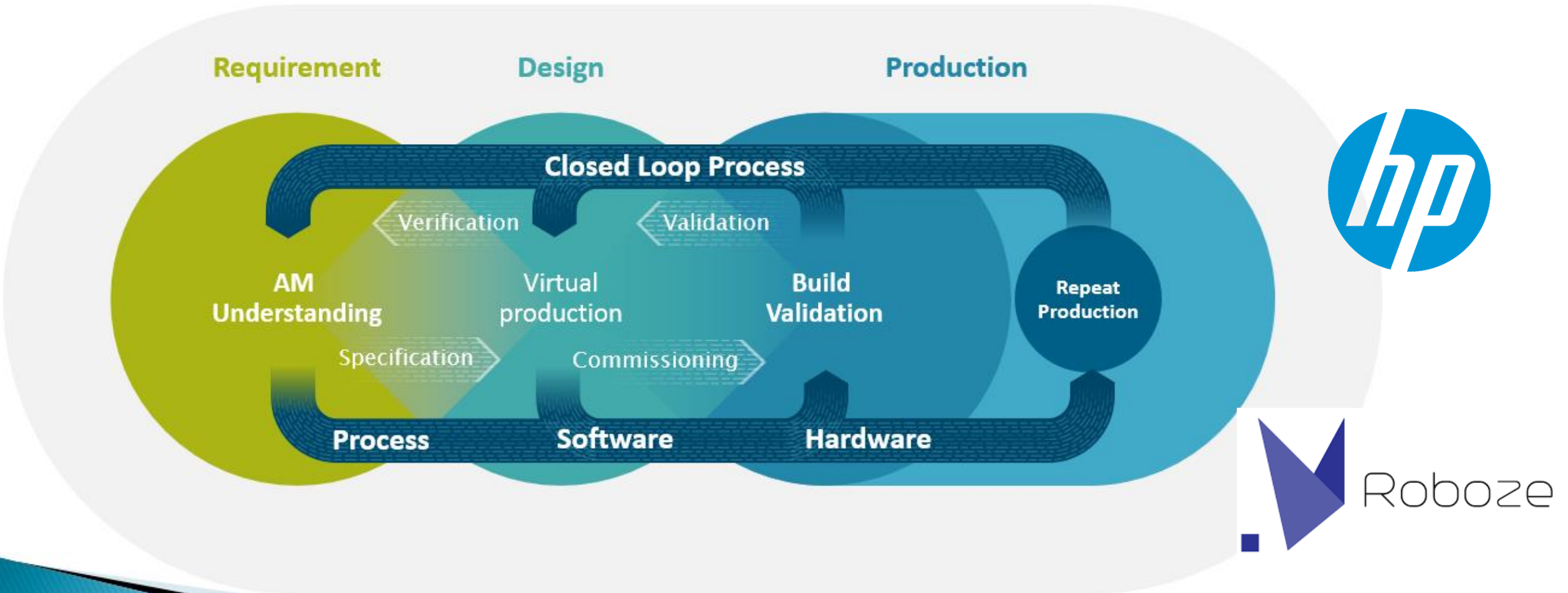


Rolls-Royce

SATAIR

Why are we here today?

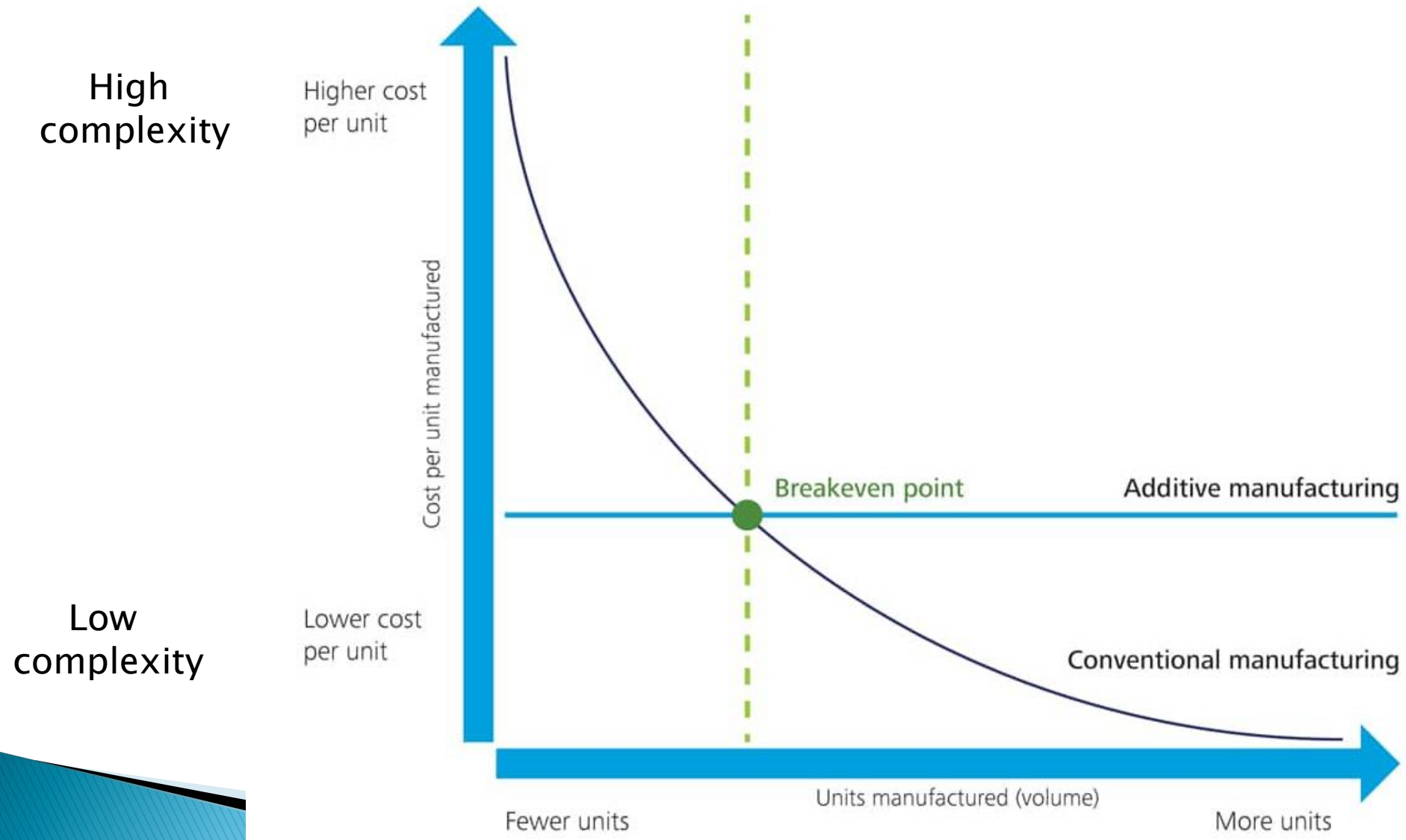
“Get Smart and improve your AM workflow”



Cost and lead time savings using 3D printing.



Understanding the break-even point with the HP MJF



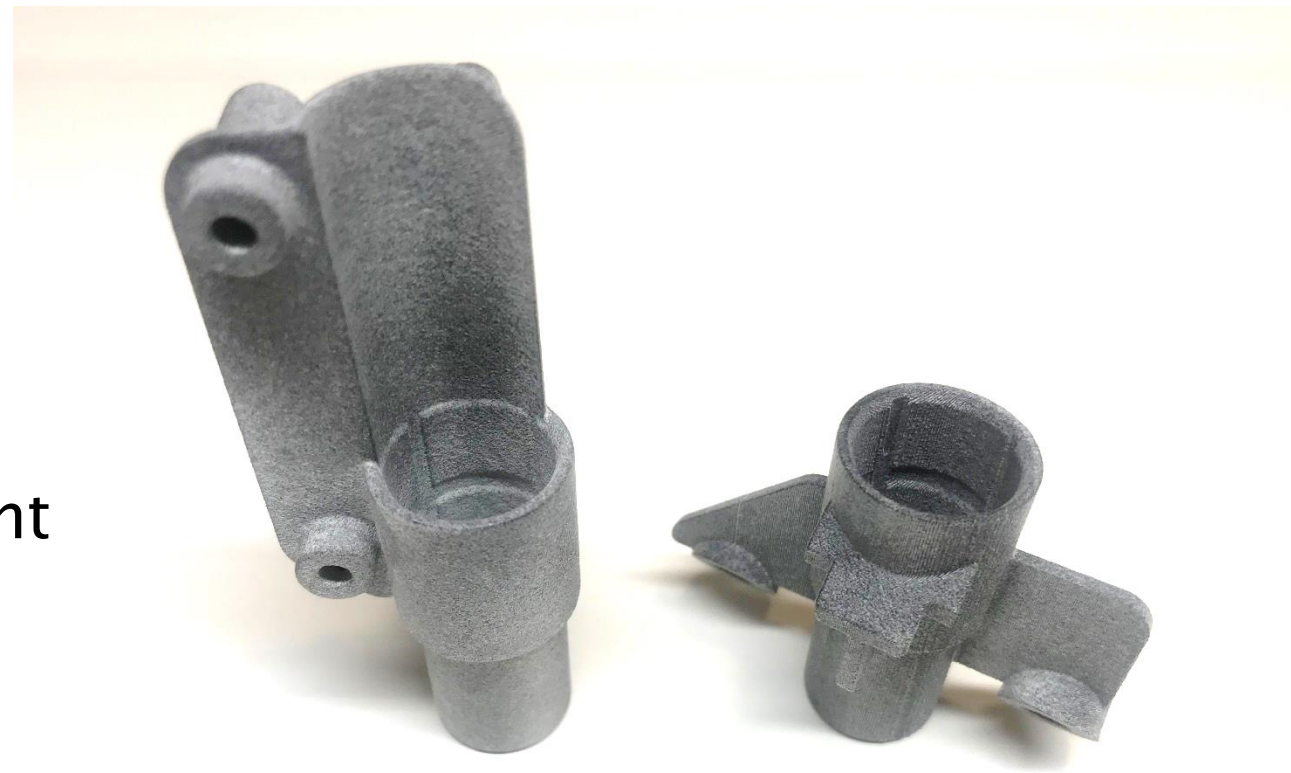
Live Hinge & clip injection Mouldings:

- Complex high cost/volume tooling.
- 8–12 week tooling lead–time.
- 3–4 tooling modifications minimum.
- HP MJF parts used in the product development phase – Fit & Function
- Overnight design changes.
- Saving weeks in tooling development time.
- Saving £1,000's in mod's.



Snap fit high accuracy injection mouldings:

- Complex high cost/volume tooling
- 12–16 week tooling lead–time
- 4–6 tooling modifications Min.
- HP MJF parts used in the product development phase – Fit & Function
- Saving weeks in tooling development time.
- Like for like functional trials.



Car Interior panel clips: Break even volume 28,000 units

- HP volume production, 60p per part
- £zero tooling cost. (est. 22k)
- Flexible shroud and clipping features
- Up to 2300 parts per Build on the MJF.
- 30 car sets per build.
- No stock – just in time manufacture.
- Different clips on each build if required.



Low volume sports car armrest: Break even volume 120 units

- HP volume production, £150 per part.
- £zero tooling cost. (est. 18k).
- Merged assemblies for added value.
- Up to 8 parts per Build on the MJF.
- No stock – just in time manufacture.
- Ongoing production run

