



PIP-II 2nd Technical Workshop – WG3

FNAL Coupler Production Capability and Facilities

O. Napoly, material from others

14-July-2022

A Partnership of:

US/DOE

India/DAE

Italy/INFN

UK/STFC-UKRI

France/CEA, CNRS/IN2P3

Poland/WUST

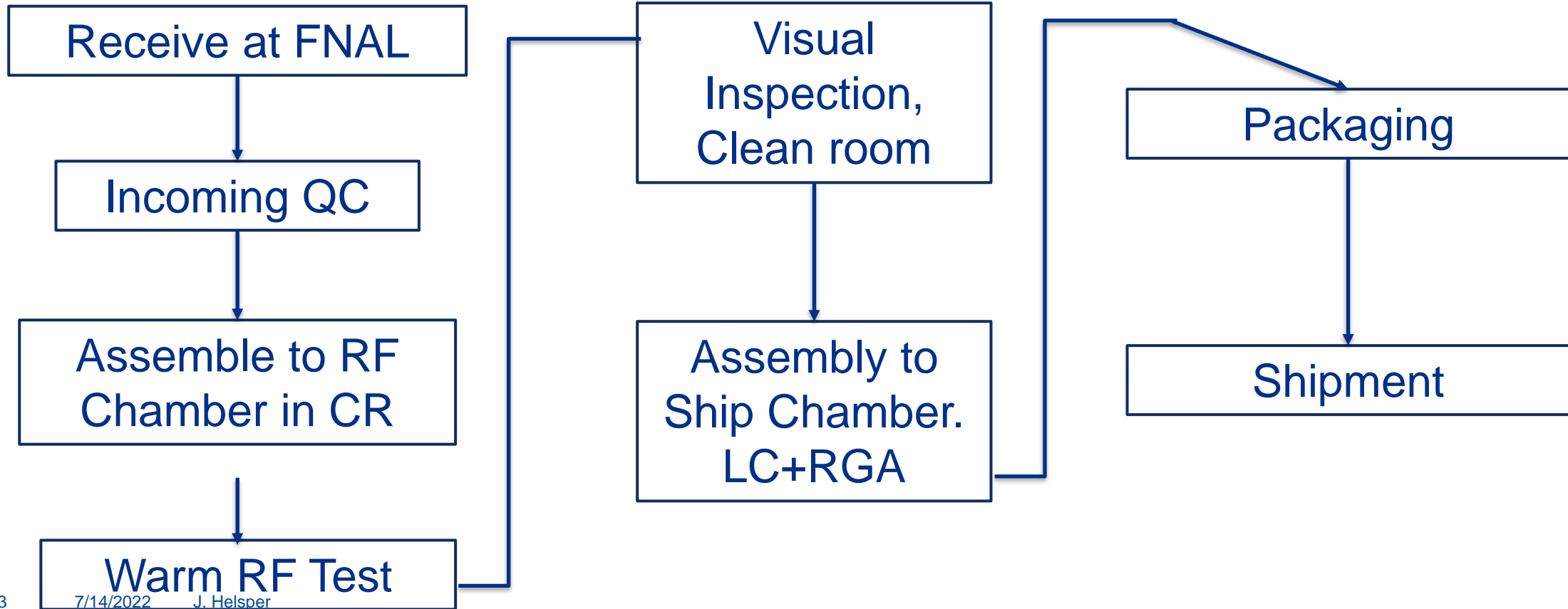


Assumptions about 650 MHz RF coupler production

1. LB650 and HB650 couplers are identical with identical RF test parameters.
2. UKRI to procure $18+2=20$ couplers for HB650 cryomodules
3. Fermilab to procure $40+6=46$ couplers for LB650 cryomodules
4. All couplers are baked at the vendor site and delivered under vacuum, ready for RF testing
5. All couplers are tested at Fermilab at a Fermilab operated RF test facility
6. One RF test stand and two RF chambers
7. SSR2 couplers will be tested separately, no interference
8. The current RF test facility is to be upgraded as to:
 - i. Location and cleanliness
 - ii. Reliability and availability of IOT power supplies
 - iii. Automatized operation

Other logistics aspects (preparation, clean room, recirculation, etc.) have not been worked out thoroughly.

Production Coupler at FNAL



RF Testing Facility at Fermilab





Conclusions

- SSR2 plans for RF coupler testing needs to be consolidated, but the assumption is that they are independent from 650 plans.
- A single RF facility is a viable and realistic option, provided that its reliability and availability is granted. Fermilab is already working of the IOT aspect.
- Logistics aspects have to be better delineated.