



AMRO AEROSPACE MAINTENANCE
& REPAIR ORGANIZATION
Center of Excellence



AMRO Center of Excellence
(CoE)





Wikipedia defines Center of Excellence as: “a team, a shared facility or an entity that provides leadership, best practices, research, support and/or training for a focus area”.



- With the advancement of manufacturing techniques and processes combined with the evolution of new sensors, sustainment of components through repair or overhaul has become a significant economic and resource drain on the industry.
- The reason is simple: New technologies being developed are outpacing repair knowledge.



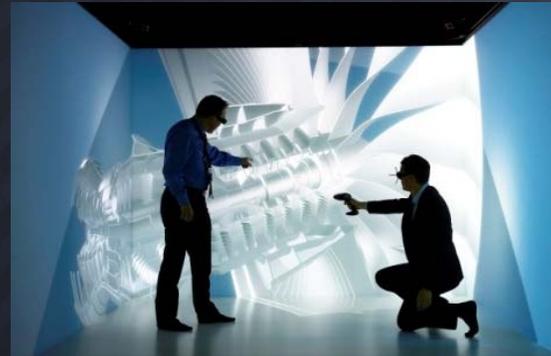
Example: Jet Engine BLISK

Aircraft engines are high-technology products, the manufacture of which involves innovative techniques. One of those components is the Blisk which is a single engine component consisting of a rotor disk and blades, which may be either integrally cast, machined from a solid piece of material, or made by welding individual blades to the rotor disk.

There is currently a global push to develop inexpensive field level repairs to reduce the cost of off-wing repairs but the technology is behind the demand. Off-wing, Blisks can be repaired by using Additive Manufacturing and Inconel Blisk Repair Technologies but the cost is enormous and the repair schemes are extremely detailed and intensive. If one Blisk airfoil is unreparable, the entire Blisk must be scrapped.



It's not just engine technology. Avionics system design capabilities are outpacing the industry's ability to provide adaptive economical repairs either through hardware or software. UAV/UAS and NextGen demands are pushing engineers to create products that are more powerful and lighter than ever.



Recognizing the need for aerospace sustainment innovation, leaders at the non-profit company EWI, The Ohio State University and GE Aerospace combined synergies with members of the Ohio Aerospace & Aviation Council (OAAC) and the Ohio Aerospace and Aviation Technology Committee (OAATC) with the purpose to help develop and form the Aerospace Maintenance, Repair and Overhaul (AMRO) Center of Excellence (CoE).



The ARMO CoE concept is centered around three cornerstone principles:

- Collaboration;
- Innovation and;
- Education



Collaboration:

- The intent is to combine industry expertise with academic research to focus on specific new technologies that are difficult for industry to develop repair schemes.
- The result is a sharing of knowledge, funding and resources for a combined solution.



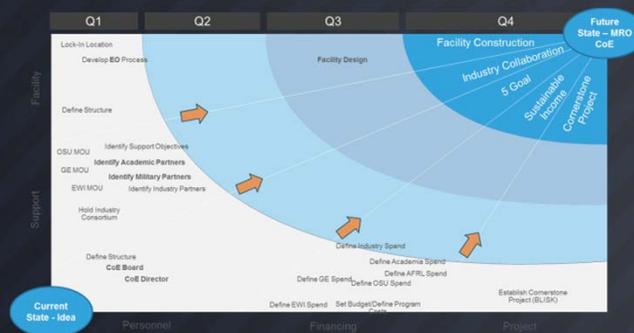
Innovation:

- Utilizing the best and brightest academic minds combined with brilliant practicing engineers and designers, new repair technologies and products can be developed while protecting Intellectual Property (IP).
- The result will be that Ohio companies and institutions will be at the forefront of innovation and will keep technologies and jobs in the state.



Education:

- The next generation of engineers is already behind repair technology. The idea is to combine practicing engineers from industry side-by-side with developing engineers to bridge the gap between academics and real world.
- The result will be that Ohio companies will be able to source qualified and trained engineers and retain expertise as these companies grow.



Current Status:

- The three cornerstone entities of the AMRO CoE; EWI, OSU and GE Aerospace have been identified with some commitments made.
- To properly form the CoE, more industry and academic collaboration, and funding, is required.
- A consortium of government, academic and industry aerospace leaders is being formed to help guide the development.



What is needed:

- Industry, Academic and Political support.
- Partners (Academic, Industry, Government, Political)
- Funding through:
 - Direct Contribution
 - Grants
 - Cost Sharing
- And **YOU!**



Questions or Interest?

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