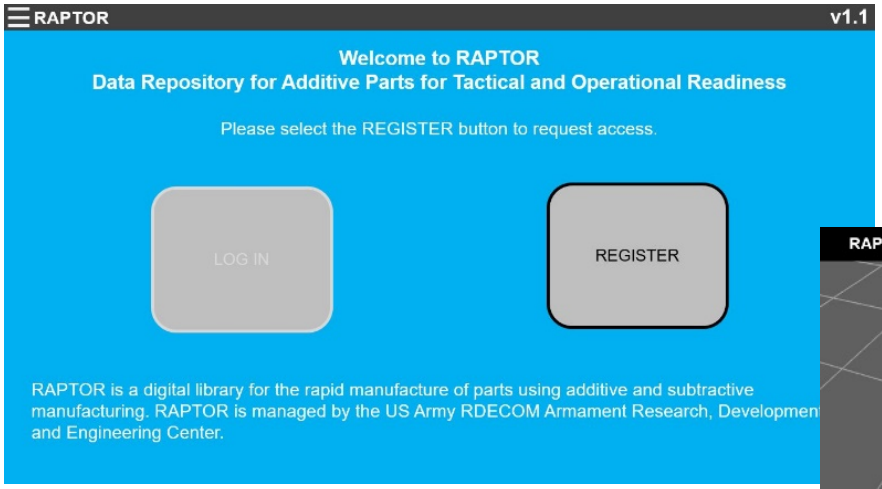
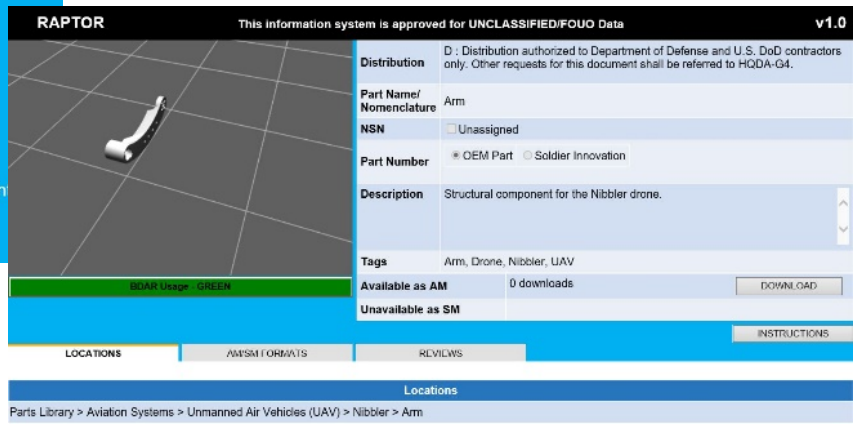
2018 DoD Maintenance Innovation Challenge

# RAPTOR Means Readiness




Timothy Phillis, Project Officer
US Army / RDECOM / ARDEC

309-782-4909

timothy.c.phillis.civ@mail.mil

# RAPTOR Means Readiness

## Problem

- Additive Manufacturing or 3D Printing is a disruptive technology which allows the Warfighter to perform expeditionary repair and mitigate down time caused by battle damage and depleted supply.
- Although the Warfighter has rugged additive manufacturing equipment; data is needed to fully execute the mission.
- What is the data? How is that data delivered to the Warfighter?

# RAPTOR Means Readiness

## Solution

- Repository to access digital data files for expeditionary manufacturing processes to produce battle damage assessment repair (BDAR) or emergency/temporary repair parts while supply system delivers replacement parts
- Easy-to-use Graphic User Interface (GUI)
- Provides multiple search options such as system type, printer or material, NSN, etc.
- Scalable from point-of-use to enterprise deployment
- Reach Back connects Soldiers to Engineers

# RAPTOR Means Readiness

## Benefits

- Data is accessible by the warfighter
- Expeditionary repair increases system and Warfighter readiness
  - 16 weeks of Non-Mission Capable time (1 case)
- Support by PMs, PEOs and Engineering Support Activities
  - PdM-SKOT funding Initial Operation Capability: using with Metal Working Machine Shop Set (MWMSS)
  - Other RDECs are adding BDAR files
- Direct connection to product support (Reach Back)
- Operationalizes the Digital Thread in the Army AM Campaign Plan

# RAPTOR Means Readiness

## Challenges & Risks

- Funding: use Unfunded Requirement authority until a budget line can be established
- DoD Community Awareness/Exposure
- Transition to a Program of Record
- DoD Internet Policies

# RAPTOR Means Readiness

## Innovation Status

- TRL /MRL = 8
  - Achieved IOC and being used in the field. New product features in development
- Any DoD agency can use for BDAR/emergency repair
- Reach back baseline
- The end state is highly reliable, quick to use and secure location to access repair data
- USMC MakerSpace, National Institute of Health repositories
  - RAPTOR is most mature

# RAPTOR Means Readiness

## Vision / Final Thoughts

- RAPTOR is available now for any maintainer to use
  - Army Allied Trades users MWMSS is fielded
  - Expeditionary Additive Manufacturing assessments using Rapid Fabrication via Additive Manufacturing on the Battlefield (R-FAB)
  - USMC use during Steel Knight 2018
- RAPTOR allows maintainers to pull on the digital thread to increase readiness

# RAPTOR Means Readiness

## Questions