

The Digital Living Plan

Enabling the Third Offset and Human-Machine Battle Networks

The Autonomy Imperative



"There is one thing that will improve the performance of the battle network more than any other ... exploiting advances in artificial intelligence and autonomy. That will allow the joint force to assemble and operate human-machine battle networks of even greater power."

Robert Work, Deputy Secretary of Defense Speaking to the Air Force Association, Sep, 2016

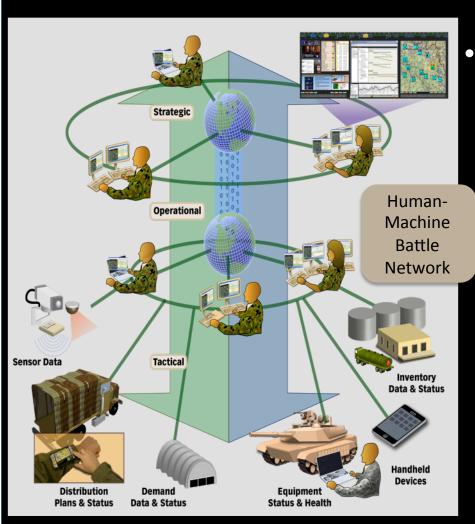
"...the mother of all technologies, artificial intelligence."

GEN Mark Milley, Army Chief of Staff
Speaking at AUSA Annual Meeting, Oct, 2016

To achieve this vision — people, organizations and autonomy (robots & systems) must perform distributed collaborative planning and dynamic, adaptive execution

Distributed Collaborative Planning





Digital Living Plan:

- Tasks x Units x Resources in Space & Time
- Supports secure, distributed fine-grained collaborative planning
- Supports automated decision support for planning & execution

Interconnects:

- Ops Log Intel
- Strategic Operational Tactical
- Planning Execution
- Soldiers, Devices, Weapon Systems
- Joint / Coalition
- Interoperability with Enterprise systems

Digital Living Plan



- Captures mission & plan content in a form understandable to both humans and machines
 - Who? Force Structures (Friend, Foe, Coalition, etc.)
 - What? Activities assigned (Kinetic and non-kinetic)
 - Where? Geospatial location actual and relative to forces and targets
 - When? Timing & Synchronization
 - Why? Commander's Intent & Mission Context
 - How? Resources (Equipment & Supply)
- Tied to Battlespace situation (objects, movements, pre- and post-conditions for actions)

Digital Living Plan: Planning In Context





Essential Concept:

A shared representation that allows both people and computers to understand the <u>underlying meaning</u> of the information.

Living Plan is the Connective Fabric





Cornerstone of:

- Collaboration
- Coordination
- Integration
- Synchronization
- Resource Mgmt

Can be made:

- Secure
- Dynamic
- Resilient
- Robust
- Network-aware



