Marine Corps Adaptive Planning

The Marine Corps Adaptive Planning (MCAP) Project is a S&T effort funded by the Office of Naval Research (ONR). MCAP is developing a suite of decision support tools to support adaptive planning for USMC C2 and tactical logistics operations. The MCAP system facilitates dynamic, collaborative integrated planning, assessment, and execution monitoring for MAGTF logistics operations that integrate Command and Control (C2), Logistics and Intelligence operations.
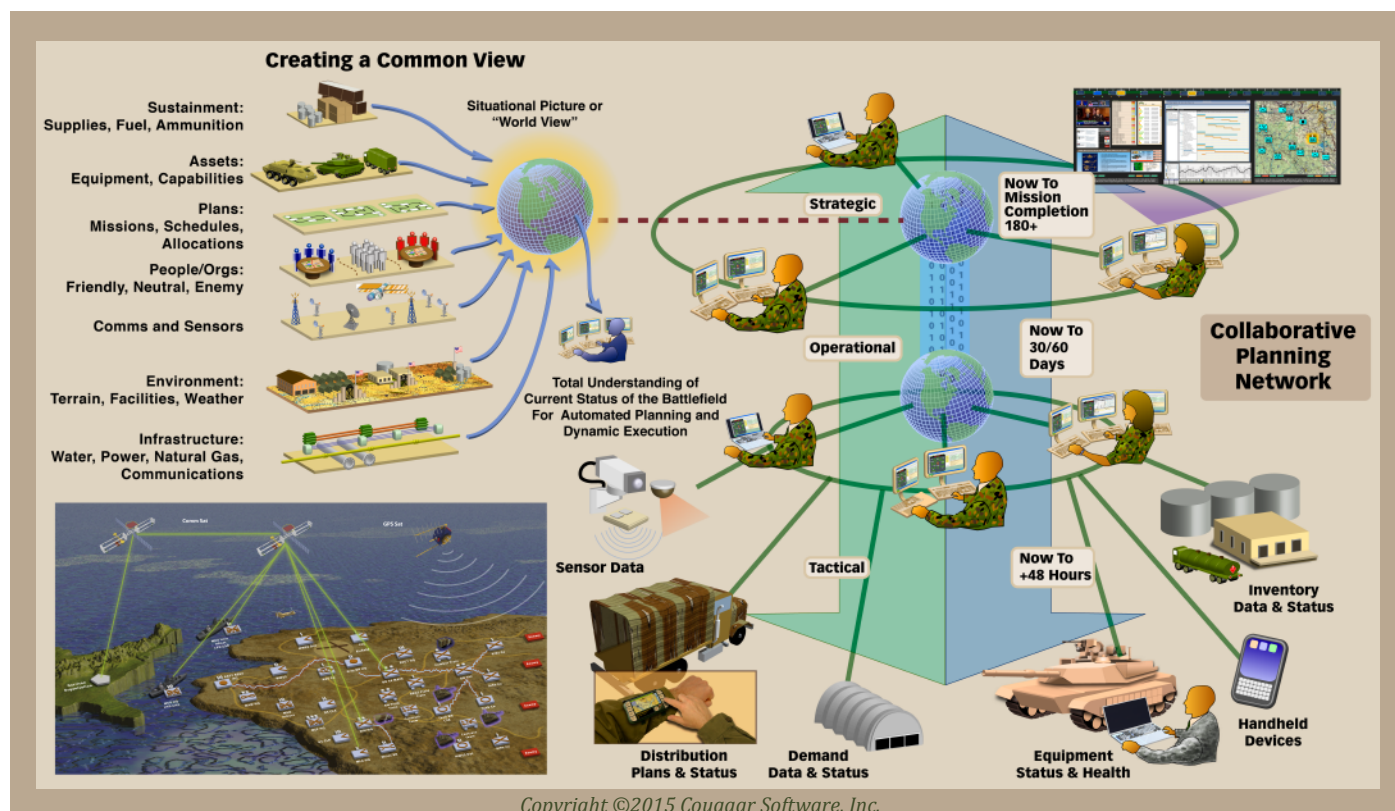
Collaborative Planning & Shared Situational Awareness (SSA)

MCAP supports collaborative planning between staff members and Command Operations Centers (COCs) at multiple echelons. SSA supports MCAP planning by leveraging constantly updated battlefield, force and supply status information, as well as awareness of actions and decisions by other commands and users. The system supports the users by reconciling status information and operational requirements to identify gaps and to make corresponding recommendations, whether that be during initial planning, execution, or re-planning due to changes in conditions.

"Living Plans"

MCAP's implementation of "Living Plans" (represented by the globe in the illustration below) integrate all the essential information about a plan including objectives and commander's intent, tasks and capability requirements, force assignments, and the resources necessary to support the tasks. Living Plans characterize the phases, tasks, sequels and branches of a mission, and facilitate progress monitoring and if necessary, re-planning.

Living Plans are maintained continuously within a networked, collaborative environment with access to current operational, intelligence, logistics and resourcing force management and readiness data and information. Automatic triggers linked to authoritative sources alert leaders and planners to events and changes in critical conditions that may warrant intervention, including evaluation of battle space conditions, specific actions, or detailed response planning.

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ONR C2 for Logistics Program

The ONR C2 for Logistics program is developing and demonstrating technology solutions for the USMC that support Marine Air-Ground Task Force (MAGTF) operations via a Seabase. Key capabilities being implemented by the program include automated support to the USMC tactical C2 and logistics decision makers during mission planning as well as execution.

Decision Support Tools (DSTs)

MCAP provides highly automated DSTs capable of performing tasks based on user-established rules, processes and policies, as well as situational context. MCAP supports the development of and reasons over plans for future tasks, while monitoring the progress of plans currently being executed. Emulating human cognitive processing and understanding, the DSTs present the right information, in the right way, at the right time – within the right situational context.

Marines can collaboratively plan within and across command echelons and supporting/supported organizations, sharing both knowledge and processes appropriate to their shared activities.

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Capabilities:

1. Distributed Collaborative Planning & Management
- Multi Echelon Adaptive Planning
- Situated Reasoning And Assessment
- Dynamic Execution and monitoring

2. Automated Plan Development & Refinement
- Expansion Of Specified & Implied Tasks
- Association Of Available resources with Required CAPSETs
- Libraries of Reusable Tasks & Plan Fragments

3. Support for multiple COA & COS
- Simultaneous Development, Comparison, & Assessment

4. Shared Situational Awareness (SSA)
- Integrates Logistics With Operations Of C2 & Intel

5. High Fidelity Sustainment & Support
- Time Phased Demand Estimation
- Automatic Sourcing & Distribution Optimization

6. Readiness Assessment
- Resource & Supply Assessment based on Mission Tasking and Current Situation
- Supports Drill down for near real time detailed assessment

7. Living Plan
- Ties Plans To Battlefield Status & Force Structure Readiness
- Ties Tasks, Sequels & Branches To Pre & Post Conditions
- Recommends Alternatives to Commanders & Staff

Cougaar Software Inc. (CSI) is a veteran owned small business focused on engineering intelligent decision support solutions. CSI is also the creator of ActiveEdge®, a commercial platform for building and managing secure and robust intelligent distributed agent based systems.