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Executive Summary

The objective of CSIS is to provide a web-based collaborative planning and decision support tool. Planning will be schedule and activity based using calendars and time lines. Resources are assigned to plan steps, followed by operational order production. This provides an intuitive and streamlined process all within the same tool set. The tool will perform three basic functions.

1. Provide enterprise wide Situational Awareness and a Common Operational Picture
2. Provide ability to synchronize operational and logistics planning at multiple echelons
3. Provide plan execution feedback allowing users to visualize the status of any unit, major end items (equipment), or plan component and associated risk
4. Provide dynamic replanning and modification of resource allocations to minimize risk and to provide interactive automation of planning and execution monitoring.

The objective of CSIS is to significantly reduce the planning cycle time line, reduce the plan's risk through informed decision-making, accelerate the replanning cycle to compensate for situational changes and accelerate plan execution through information sharing and collaboration. This in turn will have the positive impact of reducing manning and operational costs.

CSIS will accomplish the above by providing the following capabilities:

1. Distributed operational planning and execution in a networked environment
2. Operating from the CJTF down to individual combatants
3. Geo-spatial and metrics visualization support and drill-down for all plans and resources
4. Integrated resource management designed to support decision making in the context of rapid continuous planning and execution
5. Advanced knowledge management facilities to accelerate plan creation cycles

Concerning concept and software maturity, CSIS relies on existing COTS/Government-off-the-shelf-software (GOTS) to provide rapidly developed performance not efficiently available by custom development. CSIS leverages the modular use of various proven and existing applications, coupled with some custom Human Interface (HI) and data integration development, to provide a measurable and rapidly transitionable performance enhancing Decision Support System.

Benefits

It is well recognized that operational planning and logistics responsiveness must be improved, and that automation will provide means to accomplish this. Current GCSS initiatives are targeted for the CINC and JTF levels and higher, providing little benefit to the myriad of lower echelon commands straining under the manual information and coordination processes. CSIS will respond to this need. It will provide for a direct linkage between tactical and theater operations and logistics planning and execution monitoring.

The operations and logistics communities will be able to save considerable time by having an automated method to align resources with customer needs. Planning will be enhanced and require significantly less logistician involvement by the automation of logistics rules into the

planning process. Users will be able to see commodities such as meals, fuel, and ammunition across the joint enterprise, at any level. This will provide an unprecedented level of cross-supportability between component commands. Plan libraries will allow re-use of former time-lines, plans, schedules, activities, and resource bases by providing them as editable templates.

User Interfaces: Currently, tremendous labor effort is invested to manually integrate various readiness and planning information at the staff level. This is typically accomplished manually at each echelon using MS Office products. Firstly, a problematic disconnect exists between operations and logistics planning and execution in that it remains a manual interface. The manual labor required to integrate decision support information causes significant delays for critical decision-making processes (Observe, Orient Decide Act: OODA Loop), and increased time burden for key staff personnel. Second, the logistics community is sometimes forced to react to sudden "requirements" that could be foreseen using CSIIS. Finally, the documents, spreadsheets, images, and other information used to support planning are not centrally archived nor readily available to the enterprise. This critical support information is not currently provided to the user based on their role nor the task being planned. CSIIS will provide a means to access this information based on the user's role. Users will interact with CSIIS through three primary interface modes, all of which will be automated.

1. COP Direct Interface: CSIIS's Geographic Information System (GIS) interface (links directly with ESRI products to include C2PC) will link movement tracks and Unit resource readiness gauges into CSIIS. Planners will be able to engage a C2PC CSIIS tool palette to link starting points, tracks, phase lines, staging areas, and objectives to time-tables, scheduled events, and associated resources. Unit and resource icons located on maps, web pages, and digital dashboards can be drilled into for readiness and other information.
2. Text Search Query: Users will be able to use text queries to locate archived library plans, plan components, templates, as well as components of existing plans. This enables quick navigation to data that are of interest.
3. Advanced User Planning Tools: Enterprise planning and plan management tools, provided by Dekker, Ltd., will allow detailed planning and plan and resource tracking. Plan libraries will allow users to rapidly create and share plans using doctrinal plans and previous plans as templates. Users can view planning, scheduling, and resource information at any level of the enterprise. Organizational information roll ups are provided with a drill down capability.

The application suite will be connected to an Operational Data Store (ODS) that contains information deemed important for decision support. The ODS will be fed information from the user applications and from existing "legacy systems". Users will be able to see a unified real time view of disparate data that currently requires manual integration for decision support. The Dekker tools provide for process rules, triggers, and workflow between the ODS and the user, and integrate the ODS data into scheduled events, resource readiness views, and interactive mapping overlays.

How it Works

CSIIS is designed to operate at any level of command, and pull in information from any data source it has been integrated with. It does not compete with GCSS, or the JL ACTD, but compliments them by providing views and a detailed planning capability not available otherwise. It accomplishes this with proven cutting edge enterprise management COTS software suite.

Existing data systems are preserved and treated as plugged in data stores. Should they evolve over time, any links or middleware are easily modified in order to maintain connectivity. CSIIS

users will maintain the same views as before, with the middleware and ODS serving as buffers. Should such live connectivity not be desired, or be limited by tactical considerations, necessary data can be provided as file transfers from legacy systems.

CSIIS will leverage existing and future technology without imposing demands on service components to modify their existing database systems. The intelligent middleware agent features will allow for this. By design, middleware or manual file transfers will provide precise pipelines into existing and future systems by treating each existing or future stand alone system as a module.

How It Will Be Used

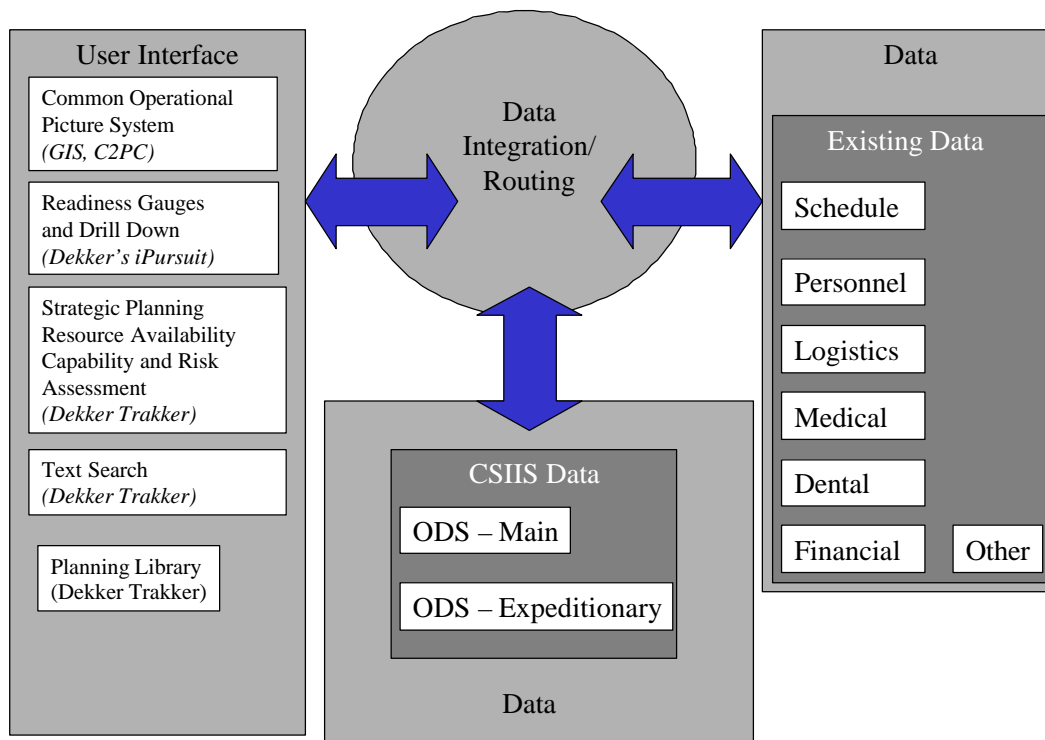
CSIIS will eliminate the need for many lengthy staff planning meetings, lessen coordination meetings, and provide information visibility to distant users not possible today. This proven concept depends on data integration that allows views of information that exceed that of the legacy system users normal purview. For example, separate units (from different service branches also) could develop completely integrated operations plans using CSIIS, and CSIIS would determine the feasibility of each portion of the plan based on the readiness data associated with each participating unit.

CSIIS is a visual system. Using easy to read graphics and scheduling information, users will be able to quickly digest large quantities of information that currently requires manual summarization and integration into operational planning. A summary of concrete results follows:

- Map views with data linked to tactical graphics and unit icons will allow for multi-dimensional Situational Awareness and support the Common Operational Picture. Operations planners and commanders will be able to immediately see if their plans and COAs are supportable.
- Schedules can be directly imported from MS Project.
- Logisticians will be able to view operations plan in detail, which will be linked directly to the assets required to support it. As plans are executed and tracked, expendable items, transportation needs, and maintenance requirements will be able to be not only tracked, but proactively anticipated on a real time basis.
- Users will be able to quickly view custom and standard gauges, charts, and tables that will present real time readiness and other information to speed decision making.
- Charts and tables are directly exportable to MS Office.
- Each gauge and event task will represent a rolled up summary that will be set at the level predetermined for the users role.
- Depending on the permissions and views granted to the user, they will be able to drill into each gauge or task, down to the individual end items or service members.

CSIIS Tool Kit: We have found it helpful to think of CSIIS as an integrated tool kit comprised of several tools that all interact with a common local ODS.

CSIIS– Process Integration



1. **Planning Engine:** Dekker's TRAKKER provides the primary planning engine for CSIIS. It integrates schedules, activities, milestones, resources, costs, projections, and risks. Groups of plans or plan components can be viewed together, which greatly helps users visualize trends. Advanced detailed planning will be performed using TRAKKER, which provides a large and small scale planning capability with resource awareness.
2. **Readiness Meter:** Dekker provides the principal readiness views using gauges imbedded inside Outlook digital dashboards, web sites, and C2PC. Gauges are tied to data sources, they are not static. Dekker also provides planning capabilities, and can therefore provide gauge views of plan progress. Dekker's products provide for complete interoperability with MS Word, Project, Excel, Power point, Access, and Outlook. Triggers set in Dekker's products will initiate email alerts in Outlook for example.
3. **Common Operational Interface:** CSIIS will provide a palette of drag and drop icons that will allow planners using C2PC to selectively link CSIIS with C2PC tracks, units, schedules, and milestones. The CSIIS C2PC palette will interact with the Dekker's tools.
4. **Planning Library:** Previous plans and contingency plans, as well as doctrinal plan templates will be as reference and starting points.
5. **Existing Database Systems:** CSIIS will greatly leverage the significant investment in business rules and information already contained within existing stand-alone data systems. This solution does not require replacement of existing data systems. Rather, it leverages the investment made in them by treating them as modules viewed as part of a larger information system. Via the use of middleware and an N-Tier architecture, the CSIIS solution will not become outdated. The structure proposed herein allows for growth and scalability that is not possible with vertically integrated systems; Linked data,

middleware agents, and manually transferred data provide a buffered tier between the actual data applications and the client application that the user will see. Each of these tiers or layers is separated from the other and communicates through open middleware standards that function as translators and data brokers.

Return on Investment

In summary, CSIIS will demonstrate that the 'Wait Time' for information and knowledge will be dramatically reduced and synchronized. Immense labor and maintenance savings gained by automating information integration currently accomplished manually should translate into significant dollar savings resulting from increases in efficiency. Corollary and more difficult to predict return on investment factors will be the decrease in supported unit wait time and in the staffing process in general.

One active component of CSIIS, on-line at a Navy F-14 depot, has provided the means to save \$300M in one year. The F-14 Operations Manager said: "We optimized our processes. We did not change our processes to match an off-the-shelf product requirement." This solution enabled the F-14 PM to make informed decisions in a proactive manner to better execute F-14 Program objectives. The initial risk mitigation process (to manage the outcome of aircraft fatigue life) returned \$300M to the Navy.

USMC Expeditionary Force reporting costs for SORTS reporting alone will be reduced by an estimated \$2.5M per MEF. Metrics from the Navy Collaboration at Sea program, involving tactical collaborative information systems, have produced results of time savings of up to a factor of ten, which CSIIS will follow. These results will directly translate into dramatically decreased CWT and OODA Loop cycles. This in turn will contribute to dramatic improvements in our capability to deliver logistics support, and thus to our superiority over enemy forces.

The strength of CSIIS, the primary manner in which CSIIS is unique, is that it is a scalable method to synchronize logistics, operations, and other information into a common schedule, also providing gauge and chart views of any data source.

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