

Suggestions and Guidelines for Automation of Academic Tools in Military Programs

As the liaison between the higher education community and military voluntary education, Servicemembers Opportunity Colleges (SOC) recognizes the value of automated tools in the counseling and advisement of military students and that each Service will choose tools according to its needs. Additionally, SOC understands the complexity of the academic processes involved in counseling, advisement and formal evaluation, and the importance of clearly communicated goals necessary for such an undertaking. SOC has identified the following necessary conditions in the interest of successful automation design development and implementation for military constituents.

Planning. Any proponent for automation should require a written plan that clearly defines the scope, desired outcomes, and project design, development, and implementation. The plan should originate from a formal organizational/educational needs assessment, involve an active cross-functional team of representative stakeholders, and must consider each Service's/stakeholder's organizational data (Enterprise Architecture) structure. The plan must be flexible enough to accommodate full representation of ideas/options and yet prevent scope-creep that could impact project success and resources. While the following broad guidelines address the basic and necessary conditions for a project, the approval criteria must go further to identify sufficient tasks, conditions and standards for the specific project. The design shall address:

Concept. (Primary Objective)

What is the proponent trying to accomplish?

What is the mission of the system:

- 1) production of a student agreement,
- 2) credit mapping into a degree plan,
- 3) counseling assistance or,
- 4) provider or program information portal which also includes items 1-3?

Conceptually, the mission/goal behind the creation of an automated system is predicated on what information is needed, which stakeholders need to be involved and what resources are critical to project design, development and implementation.

A statement of the intended goal/mission must be clearly outlined in the written scheme to fully plan and articulate the conceptual needs. The proposed design/development timeline must be included. Within that conceptual plan, the approach or method of delivery must be communicated and Service unique organizational data structure considered. For example, will the application and data be fully installed on personal computers or will use of the system require Internet access to a central data store or application host? Will a single entity develop the entire plan or will a cooperating group of organizations develop specific pieces under the guidance of an integrator or manager? What automated quality assurance checks will be in place to show return on information and/or investment for the organization and end-user?

Intended Audience (Population Served). Who is the intended user and who will benefit from the development of the project? Military students? Education center counseling staff? College evaluation staff? Define user access and support levels. Who will enter and change data? What degree of access will be available to various levels of users? Will there be multiple access levels

in both enter and read modes? How will the user get information and learn how to use the program?

Roles of Stakeholders. Active stakeholder involvement and buy-in are required and essential from the beginning conceptual stages through the point of acceptance. Depending on the actual users of the system, primary stakeholders would include military education organizations, military education counselors, college counselors, college evaluators, servicemembers, and SOC (where SOC data are used or SOC student agreements are produced). “Owners” of various pieces of the process must be determined and defined in the design and development phase as well as the implementation and testing phases. Stakeholder responsibilities must be specified, including approval and quality control. At the same time, there needs to be a process for identifying the level and number of participant stakeholders. Models and terminology must be clearly understood by all participants so that all stakeholders visualize and buy into the plan as appropriate. This translation might take the form of a project definition glossary in the Scope of Work document. To cite an example, if the proposed automated tool focuses on a complex function such as credit mapping into a degree plan, then academic stakeholders with knowledge of academic rules and the collegiate evaluation processes must be brought into the design and development process. (Academic rules to apply/distribute course credit and recommended credit from a number of different sources mapped to explicit degree and elective requirements in a degree plan for general college acceptance are far more difficult to program than automated student agreements.) Pre-planning and inclusion of academic experts to identify key academic issues prior to programming design/development/implementation are essential to successful creation and integration of automated systems.

Development Medium. Recognizing that each Service has unique requirements on the architecture, platforms and browsers it will allow to be supported, the concept of automation-whether Web-based, desktop, CD-ROM, etc.- should be at the broadest recognized national standards to ensure its applicability and accessibility across the greatest number of platforms. Modeling to current standards to support the spectrum of systems (browser, platform, etc.) for the customers must be a basic premise for automated efforts.

Content. Prior to undertaking an automated program, stakeholders must determine the standardized format for both the end product and the data.

- General information which describes a coherent set of models, guidelines and policies, used for the translation, alignment and evolution of the system that expresses the scope, and context of the product for the end-user,
- Train-the-trainer and end-user system instruction in how to use the system,
- Embedded technical assistance to make the program more user friendly,
- Parameters for system response to questions/concerns and help desk concerns,
- Online and/or offline system documentation that must be maintained.
- Export options, such as printable reports, downloads to a specific program, etc.

Data. Identification of “ownership” of primary data sources and appropriate licensing/permission/guidelines to maintain the source/product integrity are key to an automation effort. Areas requiring definition/translation include: data distribution, licensing periods, data access rules and process, how data updates are delivered, whether delivery is on a schedule or

only when changes occur, and what are applicable regulations/requirements for privacy and security.

Process. Use decision modeling (methodologies and technologies) to define the steps in the process from design to implementation. Identify a process administrator to manage project processes and milestones. Use paper prototype or a similar system design to walk through the process before modeling and system data programming begins. During the conceptual process, the following questions should be addressed.

- How will people be trained to use the system? Will there be levels of users and subsequently, levels of training?
- Documentation for how to use the system improves the chances of accurate use. Who will maintain the documentation and where will the documentation reside?
- Are the people who will be using the system actually engaged to maximize its usability?
- How will the content and technology of the system be updated? When? By whom?
- When technological changes occur how will compatibility be maintained with other systems used by the organization? How frequently must the college representative review the degree plans to ensure accuracy? How will the degree plans be validated?
- Scalability issues. Will the project be approached in phases? Is there a finite limit to its size?

Testing is the evaluation system implementation and design. Testing must be both formative (done at each developmental stage) and summative (evaluated after the project is done and implemented). Waiting to validate the design after its implementation leads to substantial rework. Therefore, stakeholder organizations must be intimately and directly involved in the process from its inception. Testing should address whether the automated system works as articulated in its design context and scope and includes the appropriate academic guidelines/rules. A defined calendar of technical/usability/end-user testing should be identified. If the plan does not work as expected, options for re-tooling and additional costs should be addressed in the Scope of Work.

Security. Define requirements for authentication, authorization, data confidentiality and integrity. Identify security management for users and content.

Resources. Identify each organization's available resources (time, financial, technical and human), the necessity to augment those resources and the impact of resource limitations on the project timeline. Contract restrictions, budget deficits, and staff requirements of all involved must be addressed.

SOC Support for Automation

A variety of automation initiatives are being undertaken to streamline advising, counseling or registration activities for military students and to prepare *SOC Degree Network Student Agreements*. In some cases these automation efforts seek to build upon SOC's articulation work with academic institutions and SOC degree network course transfer guarantees.

SOC recognizes the value of partnerships and automation initiatives to further advance academic articulations and advising efficiencies for military students. Use of SOC data in such counseling tools inevitably reflects on the credibility and reputation of the SOC organization and the military voluntary education system. Often the broader education community perceives products using SOC data as being approved or validated by Servicemembers Opportunity Colleges when, in fact, that may not be true.

Due to the interconnectedness of the *SOC Degree Network Program Handbooks*, and *SOC Transferability Tables* across the services, use of these materials and the *SOC Degree Programs Credit Evaluation Supplement* not only affects an individual Service request, but also the entire degree network system. Because SOC data are a shared deliverable under the SOC contract, consent by all Services in the degree network system must be given for them to be used in an automated data product. To insure that the automation project neither jeopardizes the credibility of the SOC organization nor uses SOC data improperly, additional guidelines have been established.

For SOC to support and participate in an automation project:

- 1) SOC must be actively involved from the project inception when SOC data are to be used from the *SOC Degree Network Program Handbooks*, the *SOC Transferability Tables* or the *SOC Degree Programs Credit Evaluation Supplement*.
- 2) SOC must determine the potential impact within the context of joint contractual requirements of Service-proposed automation projects. Where appropriate, SOC will communicate the potential impact on the degree network system to all Service chiefs during project inception, and indicate any necessary adjustments to resources.
- 3) Manipulation of SOC data must be done only by SOC personnel. Once the SOC data are transferred, vendors/military proponents must accept and follow standard SOC guidelines for data use. The automation developer must agree to accept regular feeds of updated data, refresh the automated system to insure SOC data currency and avoid the misuse of old data. Expiration/update notations must be included in the software/automation tool so that the product users will be apprised of the last product update.
- 4) Requests for data and delivery timelines must take into account staffing issues and response to all SOC delivery requirements. For example, hiring additional staff to meet deadlines may not easily provide the required specialized knowledge/capabilities.
- 5) SOC in conjunction with the Services will retain final authority regarding SOC data. (If SOC data are misrepresented or distorted, SOC will inform all Service authorities and colleges involved that SOC cannot support use of the program.)
- 6) Use of SOC logos (including SOCAD/NAV/MAR/COAST) must be defined by the President of SOC and the respective Service Chief/Director on a case-by-case basis.