

Definition of Functional Requirements

Web ASSIST Articulation Maintenance Software

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This document details the functional requirements for the Web ASSIST Articulation Maintenance Software. This software provides authorized users with data maintenance capabilities for articulation maintenance in the ASSIST database via the World Wide Web.

High-Level Requirements:

1. Facilitate dissemination of ASSIST information and updates to a wide range of customers
2. Facilitate maintenance and update of ASSIST information on an ongoing basis to reflect corresponding changes in source information
3. Facilitate maintenance of data by non-technical users
 - a. Be easy to use
 - b. Support a high volume of human data entry
4. Restrict data modification to authorized users
5. Deny public access to data until the authorized institution has approved it for release
6. Support HTML/HTTP-based data entry and update
 - a. Support World Wide Web-based maintenance of ASSIST data
 - b. Entry screens provide sufficient capabilities and performance to support real-time data maintenance
7. Support data maintenance by multiple clients on a logically central database

Functional Requirements:

1. Provide the articulation data maintenance capabilities of the Revelation-based ASSIST software, supporting the addition of new data, editing of existing data, and deletion of data for the following types of information:
 - a. California public postsecondary institutions, private and out of state institutions, and fake institutions used for generating templates
 - b. Academic years
 - c. Standard departments
 - d. Institution departments
 - e. Transfer Course Agreements (CSU Baccalaureate Lists, CSU GE-Breadth Certification Lists, UC Transfer Course Agreements, IGETC Agreements)
 - f. Majors
 - g. Articulation agreements (departmental, major, GE/Breadth)

- h. Course lists
 - i. CAN catalog information
 - j. High school A-F lists
2. Provide utilities to facilitate the maintenance of data in the database, including the following:
- a. Utilities migrated from the Revelation software
 - b. New utilities unique to the Sybase environment
 - c. New utilities for checkin/checkout/update of data between public and maintenance copies of the data

Other software requirements:

1. Authority: Users may only alter data for which they are authorized. The ACS has authority to alter/access any data in the database. The authority over specific data will be granted to specific users using a registration process. The ACS will maintain a registration database. In order to gain access to data, users will have to identify themselves and supply a password. The identification and determination of authority will be checked in the registration database. The authority for each type of data is as follows:
- a. Institutions: ACS only
 - b. Academic years: ACS only
 - c. Standard departments: ACS only
 - d. IGETC TCAs: ACS only
 - e. UCOP TCAs: ACS and UCOP only
 - f. CSU Baccalaureate lists: ACS only
 - g. CSU GE-Breadth Certification lists: ACS only
 - h. Departments: ACS only
 - i. Majors: Institution
 - j. Articulation Agreements: Receiving institution
 - k. CAN Catalog: ACS (and CAN System Office?)
 - l. A-F Lists: ACS (and UCOP?)
 - m. Course Lists: Institution
2. Duplication: Two separate databases will be maintained:
- a. Maintenance Database: Used for entry, maintenance, and testing prior to public release. Access to data in the maintenance database is restricted to authorized users.
 - b. Public Database: The database from which displays are produced by the Web Articulation Display Software. Data in the public database is available on a read-only basis to all users.

Utilities will be provided for authorized users to update their data in the public database from the maintenance database, or to remove units of their data from the

public database. (This represents new process logic that was not present in the Revelation-based ASSIST software.)

3. Access speed: Must be reasonable. Users should not experience a significant slowdown from corresponding activities in the Revelation ASSIST software
4. Archival/Data recovery: Data will be archived on a regular basis. Deleted data should be retrievable at a later date.
5. Validation: The integrity of data will be maintained by software that performs the following types of checks:
 - a. For specific valid entries (eg: "T" or "F")
 - b. Against a pattern
 - c. Against data in another table

This validation software may reside on the client or on the server, as appropriate. These types of validation are currently employed in the Revelation-based ASSIST software.

6. Locking: When an authorized maintenance user is working on data in the maintenance database, that same data cannot be updated by another maintenance user
7. Data loading: In addition to human data entry, the software will support loading data into the database from flat files.
8. Change logs: When maintenance users check in data, they will be given the opportunity to fill-out a log describing the changes they made. Other users will be able to view this log to determine the change history for any particular data, find out what changes are new, etc. (The change logs are new data, and are not present in the Revelation-based ASSIST software.) Interested parties will be automatically notified that a change or addition has taken place when data is checked in. (This represents new process logic that was not present in the Revelation-based ASSIST software.)
9. Display of Data: The Web ASSIST Display Software will be expanded to support the following:
 - a. Producing ASSIST displays based on data in the maintenance database.
 - b. Draft mode displays of articulation agreements.
10. Documentation: Web-based, on-line user documentation will be provided

Hardware/Software Requirements:

1. Client requirements are a computer with an Internet connection, running a GUI environment and web browser software, and capable of running the ACS-supplied plug-in software.
2. ACS will provide a central application server. Campuses will not need to provide hardware and support beyond that which is needed to support their local GUI environments, web browsers and Internet connections
3. Support will be provided for the possible future use of multiple servers

Resources:

1. Staffing requirements
 - a. Technical Manager: 90% for duration of project
 - b. Senior Writer: 100% for 12 months
 - c. One additional FTE (experienced PowerBuilder developer) for duration of project
2. Training
 - a. Powersoft "Fast Track to PowerBuilder" course for Technical Manager (\$1600)
 - b. Other training courses as required (cost TBD)
3. Consultants: TBD
4. Software: Sybase and Powersoft products already purchased for the Web Articulation Display project and approved by the ASSIST Board of Directors in November 1996.
5. Hardware: No additional hardware is anticipated for the development of this project. However, following deployment of this product it may become necessary to acquire additional server hardware and/or networking bandwidth to accommodate demand.

Schedule:

Per the project proposal for this project, full deployment of the Web ASSIST Articulation Maintenance Software is targeted for December 1998. Following are the major activities for the implementation of the project.

- A. Training on development products
- B. Detailed analysis of the requirements for each data element and their interrelations from the Revelation ASSIST software
- C. Resolution of open issues
 1. Scope of data collected into a single table for a single type of data.
 2. Partitioning of data into databases
 3. The amount of data that is replicated in the maintenance database (entire database or just data that is checked out)
 4. The granularity to which data can be checked out.
 5. Maintaining indexes or cross-references to allow speedy lookup and access of data
 6. Software partitioning. What goes into the client side, and what goes into the server side
 7. Other open issues identified during the analysis process
- D. Analyze Sybase database to determine interface points, access methods, etc
- E. Create entry forms
- F. Create programs to perform validations.
- G. Create utilities.
 1. Data maintenance utilities migrated from Revelation
 2. New utilities for Sybase database

3. Utilities for checkin/checkout/deletion and moving data between copies of the database
- H. Create online help system
- I. Test
 1. In-house
 2. Alpha
 3. Beta
- J. Deploy
 1. Distribute client software
 2. Training
 3. User's Guides

References:

1. Project Proposal, Web ASSIST Articulation Maintenance Software, January 1997
2. 1996-97 ASSIST Technology Plan, November 27, 1996