

CATISSUE SUITE: AN OPEN-ACCESS, FEATURE-RICH TOOL FOR BIOSPECIMEN ANNOTATION AND DATA SHARING.

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BACKGROUND

caTissue Suite is a software application developed with requirements gathering and acceptability testing by multiple institutions. The application uses a web browser to store and retrieve data from a relational database. Its open program interface (API) permits customized access to all of the application's features, and data integration with or migration from other data systems. Multiple installations of caTissue Suite can connect to the caGrid to facilitate data and biospecimen sharing across institutions. The application supports role-based access to administrative functions (container and protocol management), biospecimen accessioning, and investigator queries. An interface allows for import and coding of textual pathology reports. Discrete pathology and clinical data entry is also supported through customized data form creation.

caTissue Suite is sufficiently scalable and configurable for broad deployment across biorepositories of varying size and function. Numerous institutions have adopted the application and are using it in their daily operations. A caBIG™ supported, web-based "Knowledge Center" provides on-going application support via discussion forums, technical and user guides, training tools, and webinars.

caTissue Suite is a freely available, fully supported, open-access software application for biospecimen data management. Use of caTissue Suite by several NCI Cancer Centers and other Biospecimen resource groups is providing a rapid and facilitated path toward standardizing biospecimen informatics and promoting biospecimen data sharing both nationally and globally.

MULTIPLE REPOSITORIES

User Roles

Role	Description
Super Administrator	A Super Administrator can perform any operation within the application.
Administrator	An Administrator registers new users, containers, and collection protocols and distributes protocols into the system.
Superuser	A Superuser can participate and register users to collect protocols.
Technician	A Technician can operate into the system.
Scientist	A Scientist performs queries and creates specimens and specimen areas of interest.
Student	The role can be customized and can require privileges not assigned to the role.

Role Privileges

Role	Privilege	Access
Super Administrator	Administer	Full
Administrator	Administer	Full
Superuser	Administer	Full
Technician	Administer	Full
Scientist	Administer	Full
Student	Administer	Full

Defining Users

User Name	First Name	Last Name	Role
admin	Admin	Admin	Super Administrator
super	Super	Super	Superuser
tech	Tech	Tech	Technician
sci	Sci	Sci	Scientist
stu	Stu	Stu	Student

A single installation of caTissue Suite can allow for the operation of multiple, independent repositories which may or may not elect to share responsibilities for biospecimen collection and processing from a single protocol. Role based access allows individual users to be assigned add / edit / read privileges based upon their affiliation with an individual repository or their involvement in a particular collection protocol (study). *Left* shows a "map" of the multi-repository environment represented in caTissue at Washington University.

CONSENT TRACKING

caTissue Suite allows for participant consent tracking at the individual specimen level. Consent "tiers" are defined during protocol set-up. Consent and consent withdrawal can then be recorded and validated prior to specimen distribution.

BIOSPECIMEN LIFECYCLE

Events that occur in the lifecycle of individual specimens (collection, receipt, transfer, freezing, fixation, centrifugation, etc.) as well as quality review parameters can be recorded.

PATHOLOGY ANNOTATION

Specimens can be annotated with CAP checklist-based pathology data forms or by import, de-identification, and concept coding of pathology report text using caTIES-like functionality. Other data forms exist for standardized clinical data entry and additional controlled-vocabulary data forms can be created using the Dynamic Extensions tool.

SEARCH FUNCTIONALITY

Users can create and save custom searches (*left*) and result views (*right*). Selective results from any search can be exported or added to a queue for additional operations (request, ship, transfer, dispose).

DATA SHARING AND caGRID

caTissue Suite v1.1 is caGrid enabled, allowing cross institutional biospecimen data sharing. Using the caGrid Portal (<http://cagrid-portal.nci.nih.gov>) or other tools in development such as caB2B (<http://cab2b.wustl.edu>), users can search across institutions for available biospecimens. The open interface (API) of caTissue also allows integration with other systems, such as clinical data repositories.

SUPPORT

Technical and end-user documentation, training modules, discussion forums, FAQs, and application updates for caTissue are supported through the Tissue Banks and Technology Tools Knowledge Center.

<https://cabig-kc.nci.nih.gov/Biospecimen/KC>