Introduction

AcuityPlus™ enhances the Quality Assurance and Management capabilities of the Cistera Convergence Server by taking existing collection, assembling, and reporting capacity and provide contextual case-centric view of assembled data.

This real-time case-centric view is composed of three subcomponents:

- An Adaptive Case Management System;
- A Common Resilient Data Repository; and,
- Advanced Collection and Collaboration Tools.

The Adaptive Case Management System is a complete system for managing collaboration, workflow, policy compliance and full report production within an enterprise or among many enterprises. It has the flexibility of a custom solution but at a low commercial-off-the-shelf cost. It is resilient to change, as and when, operational requirements and policies change.

The Common Resilient Data Repository is a secure, scalable store for very large intelligent collections of information (called “contextual sets”) shared through the collaboration of people, processes, knowledge and information. The classic example is an investigation, either analytical or field-based (e.g. customer service complaint, investigating fraud, compliance enforcement of regulations, etc.), although the concept is invaluable for a broad range of knowledge worker applications. The repository’s data acquisition capability accesses and reads external sources of information. It stores this information (or a representation of it) in a persistent store. It also manages the lifecycle of the collected information including access management, reporting, retention, and retirement, if policy dictates data periodic review and deletion.

The Advanced Collection and Collaboration Tools automatically collect and update the repository with a variety retrieved data as those data change; e.g. internal and external data sources and new information derived from the Adaptive Case Management System described in this paper, and makes that information the basis for cogent collaboration. The collaboration capabilities within the enterprise team environment allow users to share and update the same cases, synchronize changes, and manage the case process in a single integrated platform. This paper describes the architectural foundation and the application features which support integration of these key usage areas.
Adaptive Case Management System Framework

What is a Case?

A Case is a managed collection of information which can be used to support an analytical process, study an individual or group, follow up an incident or set of incidents, or accomplish many other operational activities. Cases contain both structured and unstructured data. A Case can be managed through both manual and automated processes. Case data are stored in the Common Resilient Data Repository.

Forms, workflows, data management, automated compliance and integrity processes, and all other aspects of a Case’s lifecycle are controlled by the Case’s type. Each Case is an optimal mix of formal and ad hoc actions for each activity.

A Case is also a container for content and artifacts associated with the Case. These can include email, video, audio files, transcriptions, images, newsfeeds, online social network feeds, documents, spreadsheets… anything that can be stored digitally. Even physical files can be digitized and made searchable depending on the page quality of the original documents.

Cases can utilize series of common templates for executing routine or automated processes when strict procedural compliance is required; e.g. requesting a warrant. A Case is also a container for collecting all kinds of information for further analysis. Analytics and search can be run against the Case’s content, and retrieval made easy subject to comprehensive, Case-specific access controls.

The Case is the foundation to ensure process integrity and the Case construct is the means to make the operational and analytical teams efficient and cooperative.

Each Case and each specific case artefact has its own access management controls. Read, write, and manage permissions can be set for both roles and individuals, and a complete audit log is maintained for each Case. The audit log contains every change made to the Case data and access controls during its lifespan.

Structured and Unstructured, Processes and Data

AcuityPlus supports innovation and the development of best practices not just a “one-size-fits-all” approach to case management. Consistent use of best practices leads to improved outcomes, and thus personnel do not need “canned” process maps. Structured and unstructured processes can be supported concomitantly in a Case although, in most situations, some step-specific data will need to be recorded (e.g. basic forms, memos, or forms

Automated background processes to independently assess and ensure compliance with internal and / or external rules and policies at key points in managing a Case’s progressions provide practice integrity, efficiency and completeness. Warnings of non-compliance can be issued, and when non-compliance is serious, the Case progress can be blocked pending a remedy for the deficiency.

Complex Case Processes

Cases can be simultaneously updated by users (including users in the field) or Cases can be updated by automated processes. As such, Cases are dynamic entities. Users without permanent privileges can receive Case data and can submit Case data, subject to manager established rules and processes.

Cases can be associated with each other, branches created, and consolidated. A user can search across all Cases, and manage redaction for external reporting (e.g., privacy and freedom of information compliance). Reports, dashboards, and Case cost accounting are integral to all stages of Case processing.
AcuityPlus has an easy-to-use web-based user interface. Key components include:

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<tbody>
<tr>
<td>Case Collection Management</td>
<td>An easy to use view of what is contained in the Case collection, including comprehensive content analysis on each of the media types.</td>
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<tr>
<td>Case Collaboration</td>
<td>An ability to share, tag, and add notations and comments among the operational team.</td>
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<td>Access Controls</td>
<td>Comprehensive, Case-specific access controls and compartmentalization.</td>
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<tr>
<td>Geo-spatial Analysis</td>
<td>An ability to plot the Case collection on maps and aerial imagery provides a visual aid in assessing content.</td>
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<td>Case Collection Link Visualization and Analysis</td>
<td>Browser-based functionality to visualize and display a Case collection showing relationship linkages between people, places, events, and objects including an ability to “walk” the links through the Case collection artifacts (and throughout the Common Resilient Data Repository, subject to access controls and regulatory privacy constraints).</td>
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<tr>
<td>Case Reporting &amp; Statistics</td>
<td>Determination of Case status, bottlenecks, pending actions, compliance reviews, and efficiency metrics allows for effective case management.</td>
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<tr>
<td>Case Cost Accounting and Workflow Statistics</td>
<td>Customizable tools to review the progress of Cases through the enterprise leading to better insights into organization efficiencies, resource allocation, and cost information.</td>
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<td>Management of Task Assignments</td>
<td>Simple or nested task assignments allows for efficient work allocation within the team and by management.</td>
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<td>Calendaring &amp; Scheduling – Case and User</td>
<td>Calendar management is a comprehensive calendar and scheduling package that manages individual user’s calendars as well as each Case collection allowing for one-glance time management and planning.</td>
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<td>Case and Repository Wide Search</td>
<td>Powerful search capability for structured and unstructured information.</td>
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Case Product Production and Publishing

Different Case types may have different (and customiz-able) requirements for producing “product” (e.g. reports, analysis). AcuityPlus has pervasive functions that support report production and publishing including:

- Document authoring, and publishing based on Case Type;
- Multiple format outputs (PDF, .docx) and extensive template authoring;
- Edit checking and approval management;
- Forms management;
- Adaptive workflow and process management for report publishing;
- Secure in-progress and final document storage and serialization;
- Search, association and retrieval of reports and working papers;
- Automatic reporting and alerting of report production;
- Case cost accounting; and
- Legacy data integration.

Web-based support for collaborative document authoring and report generation is an invaluable benefit of the collaboration platform. Repetitive tasks can be automated to maximize team efficiency. Content is managed and watch-dogs can be set to ensure that high standards of report production are achieved and compliance rules are met.

Document management and report production are core functionality and a user can import findings, search results, and add external data and artifacts into the Case production process.

Case reports are securely stored in the repository, can be sent electronically or printed. Electronic transmission can occur with alerts, follow ups, and audit trails.

Extensive Case Management Process Support

The Adaptive Case Management System supports and manages large numbers and types of Cases quickly and efficiently. The system records activities, identifies process bottlenecks, and manages resources needed in support of an endless variety of case types.

Typical case support functions include:

- Attachment of any type of document/artefact securely;
- Adding notes, comments, wiki-style collaboration;
- Cross-case search and retrieval;
- Real-time insights, follow ups and early corrective action;
- Complex case life cycle management; and,
- Audit trails, discovery, and redaction (when necessary).

Managing the Initiation, Progression and Closure of Cases

Customizable and tailored processes for case management can be implemented when a degree of structure is necessary. These typically are grouped into three phases: (1) initiation, (2) processing, and (3) closure.

Initiation

Cases can be manually initiated or system generated when some pre-determined conditions are met.

Processing

Rules and alerts are supported along with Case assignments, notifications, confirmations, reminders, escalations and review / approval. Comprehensive report authoring, external reporting, discovery support, redaction tagging and case management status reporting are configurable to support team practice.

Closure and Future Reference

Case closure and future reference are customizable. Closure disciplines can be enforced, Cases can be prepared for discovery (when necessary), and all Case artefacts can be referenced in the searchable repository.

Retention policies can be managed along with information requests. Management reporting and operational metrics on case production allow for efficiency improvement and identification of bottlenecks.
Common Resilient Data Repository Framework

The Common Resilient Data Repository securely manages, stores, and supports the search all files, documents, Case materials, and artifacts. Indeed, it makes searching almost any type of digital information readily available to the user.

It is also a simple process to get information into the repository in an orderly and secure way but with comprehensive, Case-specific access controls. Artifacts and knowledge can be accessed anywhere, on any device, using HTML5 and WebGL.

The Common Resilient Data Repository has near unlimited scalability and automatic redundancy using a very low-cost hardware and software footprint utilizing commodity class hardware, with no Microsoft®, Oracle™, etc. license fees. The platform embraces Cloud and Web 2.0 initiatives.

The Common Resilient Data Repository is a highly modified Apache Cassandra-based, distributed storage and retrieval system for managing structured data (e.g. forms and records) and unstructured data (e.g. notes, documents, email, transcriptions, images). It is designed to scale to a very large size across many commodity servers with no single point of failure.

Reliability, at this scale, is an expensive challenge for prior generation technologies. In contrast, the Common Resilient Data Repository runs on top of a Cloud infrastructure of potentially dozens of nodes spread across different data centres. At this scale, small and large components can fail without impact. The repository manages its persistent state in the face of these possible failures ensuring reliability and scalability for stakeholders who rely on this service at a low cost structure never before achieved.

Design goals achieved include: scalability, high performance, and high availability with a simple data model that supports dynamic control over data layout and format...at a very low cost structure.

Advanced Collection and Collaboration Framework

AcuityPlus allows for the sharing, updating and synchronization of Case data throughout the enterprise (as well as associated agencies) with an extraordinary efficient hardware and software footprint. Audit logs are maintained and configuration management and access controls ensure orderly management of the analysis process.

The collaboration platform uses the Common Resilient Data Repository described above. It is a fast, efficient, and highly scalable store of information for both structured and unstructured information. All Case material and other repository material can be searched at the same time. Data can be tagged, action taken, knowledge shared, and information retired, as necessary. Access via web-pad / web-tablet, or other mobile device, anywhere is possible subject to administrator security controls.

Cases can be updated automatically via user created watch lists. The system will automatically search for new information of interest and update Case information from any data source described in the watch list. The user is notified of new information and can approve all updates from a pending action list. New information is added to the repository and made searchable across all users.
Quality Assurance and Management

Cistera Networks’ Quality Assurance and Management (QAM) solutions allow organizations to better respond to the needs of customers, partners, and their own internal requirements. QAM recording and monitoring capabilities build feedback loops that automate compliance and audit functions. These solution sets include recording, monitoring, screen capture, supervisory intervention and reporting tools that increase an organization’s ability to view and respond to customer needs and provide an audit trail for internal purposes.

Cistera expands the features and functionality of an IP Communications environment by delivering critical Quality Assurance and Management capabilities. AcuityPlus forms part of Cistera’s QAM solution set.

Ordering Information

Cistera Networks markets, sells, and fulfills orders for its products and services through a robust channel of authorized solution providers.

Service and Support

Cistera provides technical service and support for the company's products for reseller partners and customers in North America and Western Europe. For technical support, contact Cistera at 866.965.8243 or support@cistera.com.

Collect - Cistera’s award winning Convergence Server offers powerful solutions for business and organizations of all size. Customers can choose from a single server all the way up to multi-cluster servers for thousands of users.

Assemble - The Cistera Convergence Server three application engines for different requirements. From Quick-Record for Adhoc recording, to CCRRecord for continuous high speed recording, to LMRRecord for mobile devices.

Report - The Cistera Convergence Server has one of the most comprehensive reporting engines available today. The Cistera Reporting Engine comes not only with standard reports but a customizable template manager.

Analyze - Cistera offers AcuityPlus for Case Management as well as Telecom Expense Management Services for fine-grain control of your telecommunications budget.

For More Information

For more information about Cistera AcuityPlus, visit www.cistera.com or contact your local Cistera Representative or authorized reseller partner.

Cistera Networks is a leading provider of enterprise communications platforms and services. The company blends powerful application infrastructure with industry-specific business processes, to deliver the benefits of voice, video and data convergence to the user. Cistera’s industry-leading platform delivers the most reliable, scalable and secure application services for IP-based network environments. Its broad portfolio of application services enables users to improve customer service and satisfaction, increase productivity and collaboration, improve responsiveness to critical incidents and to provide a safer environment.

Based on open standards and a proven server technology foundation, the award-winning Cistera ConvergenceServer has a single unified administration which delivers the lowest total cost of ownership in the industry. It enables customers to create robust and scalable environments that are flexible enough to adapt to their changing needs by scaling up to support from fewer than one hundred to thousands of users, and scaling out to support multiple sites, making it ideal for a broad range of organizations.

6509 Windcrest Drive, Suite 160
Plano, TX 75024
Phone: 972.381.4699
Toll Free: 1.866.965.8646 Facsimile: 972.381.4635
http://www.cistera.com

Sales Support Contacts
Sales Support Number 1.866.722.2660
Email: SalesSupport@cistera.com

Cistera Networks™
www.cistera.com