Pearl of ICT
e-Document Solution

2012
The Pearl of ICT e-Document solution provides an end-to-end document management system for capturing, processing and storing electronic documents. Within this robust solution, there are two unique offerings available to service any organization: Sand Pearl™ and Black Pearl™.

The custom solution is uniquely targeted to address all e-correspondence needs for government agencies and organizations:

- World-class, multi-touch user interfaces that are customized and branded for your organization.
- A seamlessly integrated, end-to-end Arabic solution for all stages of a document lifecycle.
- Easily configurable rules-driven workflow engine to meet the business requirements of your organization.
- A multi-layer security model that controls access to modules, sensitive data, workspace configuration and actions on documents based on security privileges.
- Built solely on Microsoft technologies without the need for any additional 3rd party software.
Home screen with 2 stacks of documents, and access to reports and search.

Viewing a document and its attachments

Viewing geographic areas associated with a document

Reports on incoming documents
Black Pearl is a multi-touch electronic table specifically designed for managers and high-ranking officials. Documents are organized into two stacks:

1. A Signing stack, containing documents ready to be signed.
2. A Review stack, containing documents waiting to be reviewed.

The user sorts through documents in this natural user interface (NUI) as they would with paper documents on their physical desk.

Black Pearl is targeted for Microsoft Surface® v2, but also runs on any Windows 7-enabled multi-touch desktop or tablet PC.

Viewing Documents

The manager views documents and their attachments in one of two modes:

1. Book mode, to leaf through the pages of a document as you would a book.
2. Scatter mode, to work on multiple pages simultaneously by fanning out the document pages.

Features include:

✔ Support for the following attachment types: scanned and MS Word documents, images, and multimedia (video/audio files).
✔ Sign or annotate documents with a digital stylus.
✔ Navigate geographic areas associated with a document via integration with Bing™ Maps.
✔ Print documents and annotations with high-fidelity.

Communication

The manager communicates with other employees in the organization with a single tap.

Features include:

✔ Author notes with a digital stylus and attach them to the document.
✔ Conduct a video or phone conference via seamless integration with Microsoft Lync®.
✔ Reassign a document to the next action taker.

Manager’s View of the Organization

The manager has easy access to information about his employees and documents entering and leaving his organization.

Features include:

✔ View the entire reassignment history of a document.
✔ Inspect the workload of any employee in the organization.
✔ Search for all incoming and outgoing documents in the organization.
✔ Reports on activities in the organization visualized in pie and bar chart formats, with drill-down and filtering capabilities.
Metadata entry screen for incoming records

Annotating scanned attachments

Home screen for the Information Center module

Viewing a listing of the employee's current documents
Sand Pearl is an end-to-end e-Document solution that supports all aspects of the documents lifecycle covering:

• Document entry into the system
• Document workflow inside the enterprise
• Outgoing documents leaving the organization
• Tracking of responses and follow-ups
• Document archiving in the Information Center

Sand Pearl is a touchscreen application that runs on Windows 7-enabled desktops or tablet PCs.

Workspace Configuration

Sand Pearl has a desktop design that organizes users’ workload into:

• Folders: contain documents assigned to the user to process.
• Clipboard views: contain documents that the user is monitoring but does not currently own.

Features include:

✔ My Documents and Has Deadline folders containing the user’s current workload.
✔ A Late folder, where late documents are moved by the system automatically, thereby flagging delays for employees, departments or the organization.
✔ A department may have a special Secretary role to handle all incoming documents to the department via a shared Department Secretary folder.

Role Management

The user’s workspace configuration and security privileges are based on their current role.

Features include:

✔ Multiple roles for a single user.
✔ Instant security privilege updates when changing between roles.

Incoming Department Module

The Incoming Department module is the central entry point of documents into the system. Documents may come from an individual or a public agency and may be submitted in person or online.

Features include:

✔ Metadata entry screens to create a database record for the incoming document.
✔ Augmented metadata with scanned, soft and enclosed attachments.
✔ Built-in support for scanning documents.
✔ Printed barcodes to track the physical location of the document and its enclosures.
✔ Printed receipt for the document submitter to follow up on their request.
Tracking Responses and Follow-ups

Linking binds related incoming and outgoing documents in the system to make it easy for the user to track responses and follow-ups.

Features include:

✔ Graphs depicting the relationships between incoming documents, outgoing documents, follow-ups and responses.
✔ A dedicated ‘Responses’ view to monitor and process responses to outgoing documents.
✔ Ability to mark a response as sufficient or insufficient.
✔ Link external follow-ups (from individuals and agencies) to existing incoming documents.
✔ Issue and link internal follow-ups to external agencies and individuals on outgoing documents awaiting a response.

Document Workflow

The movement of a document inside the organization is driven by a workflow with configurable business rules and user actions that guide the document lifecycle.

Features include:

✔ Bundling of related documents to enable the user to perform operations on multiple documents at the same time.
✔ A single-click electronic reassignment of a document to another person or another department.
✔ An optional inter-department delivery report as receipt when transferring the physical documents.
✔ Tracking of the electronic and physical locations of the document.
✔ Visualization of reassignment history in tabular and timeline formats.
✔ Reserve incoming or outgoing records to quickly start processing a document while delaying metadata entry for a later time.
✔ The ability to put a document on hold and shelve it until further notice.
✔ Setting notifications (SMS, email, popup) on lifecycle events to receive updates on the processing of a document.

Previews and Proposals

At different stages in the processing of a document, a Preview (a draft summary and recommendation) and/or a Proposal (a draft stating the decision to be taken regarding the document) may be added.

Features include:

✔ Options to create the proposal or preview draft by scanning or using Microsoft Word®.
✔ Integration with Microsoft Word® to support in-place creation of a new proposal or preview.
✔ Lifecycle (creation, modification, saving and deletion) of these Word documents is completely managed by Sand Pearl and made inaccessible to the operating system.
✔ An Editor-Typist bi-directional workflow to author, transcribe, revise, and accept/reject drafts.
Annotations

Documents may be annotated electronically to provide in-line feedback and comments.

Features include:
- ✔ Annotating directly on the document using a digital stylus.
- ✔ Annotations are supported on MS Word and scanned documents and images.
- ✔ A level of confidentiality (normal, secret, top secret, undisclosed) can be specified on an annotation to control its visibility.
- ✔ A single document may contain any number of annotations with varying levels of confidentiality.

Information Center

The Information Center handles all aspects of classification and archiving of documents.

Features include:
- ✔ Classification using a configurable multi-level classification scheme.
- ✔ Automated classifications by the system based on keywords, inter-document links and heuristics of previous classifications.
- ✔ Archiving documents in multi-level physical locations that map to the classification codes.
- ✔ A check-in/check-out workflow enables users to extract/return archived records.

Committees

The Committees module handles the workflow for documents sent to special committees for study and feedback.

Features include:
- ✔ Designation and creation of committees and subcommittees.
- ✔ Option to have non-employees of the current organization as committee members.
- ✔ Bundling and reassignment of documents to a committee for study.
- ✔ Creation of an agenda and calendar invitations for the committee.
- ✔ Sending memos to non-committee members for feedback and clarifications.
- ✔ Capturing feedback and meeting minutes.
- ✔ Finalizing the meeting minutes by creating a proposal.

Outgoing Department Module

The Outgoing Department module is the central place to send documents out to individuals and external agencies.

Features include:
- ✔ Support for three types of outgoing documents: Final, Awaiting Response and Follow-up.
- ✔ Send copies of an outgoing document to 0 or more external agencies.
- ✔ Manage enclosed items inherited from the linked incoming record or initiated afterwards and decide their ultimate destination: be it an external agency or the Information Center.
- ✔ Printed barcodes for the main outgoing document and its copies and enclosures.
- ✔ Delivery reports for outgoing documents to be signed by the recipient and returned.
Search and Reports

Search and Reporting modules enable the user to locate and generate reports about documents in the system.

Features include:
- Powerful Arabic text search in document metadata.
- Advanced metadata search for incoming and outgoing records.
- Searchable archives of the Information Center by classification codes and archive locations.
- An extensible user interface where the user can plug in and generate custom reports from SQL Server Reporting Services.

Auditing

The Audit Log captures every user action performed in the system at the user, record and machine level.

Features include:
- Capturing action details, user information and machine information for every action taken on a record.
- Capturing details about general user actions. For example, search, reports, log on and off.
- Search the audit log by user, machine IP or record number.

Admin Tool

The Admin Tool is a seamlessly integrated module where the administrator configures all aspects of the application.

Features include:
- Creation and management of departments, roles and users.
- Assignment of security privileges to users and roles.
- Management of lookup tables for record metadata.
## Technologies

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Windows 7</th>
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<tbody>
<tr>
<td>Built on Microsoft technologies</td>
<td>Microsoft .NET 4.0 stack:</td>
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<tr>
<td></td>
<td>• Windows Presentation Foundation (WPF)</td>
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<td>• Windows Communication Framework (WCF)</td>
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<td>• Windows Workflow Foundation (WF)</td>
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<td>SQL Server 2008 R2</td>
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<td>Seamless integration with Microsoft products including:</td>
<td>Microsoft Word®</td>
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<td>Microsoft Lync®</td>
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<td>Microsoft Active Directory®</td>
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<td>Microsoft Exchange®</td>
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<td>Bing™ Maps</td>
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<td>System Center Configuration Center (SCCM)</td>
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<td>System Center Operations Manager (SCOM)</td>
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<td>Seamless integration with peripheral devices including:</td>
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<td>Scanners</td>
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<td>Barcode readers</td>
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<td>Digital styluses</td>
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