
Delivering the Network Centric Capability to the Warfighter Today



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8th ICCRTS
June 20, 2003



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- 2. Problems Solved by Ultra-Thin-Rich-Client User Interface Technology**
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Executive Summary

- **Ultra-Thin-Rich-Client User Interface (UTRC-UI) Technology can deliver net-centric applications today overcoming the limitations of**
 - **Network bandwidth and connectivity**
 - **HTML-based Web application development**

- **Many success cases illustrate the value creation potential of this new innovation as applied to network centric warfare:**
 - **Timeliness**
 - **Relevancy**
 - **Accuracy**
 - **Security**

- **Compelling value proposition is that the potential scope of application areas is quite diverse, enabling the warfighters to realize the transformational NCW vision today**

1. Executive Summary

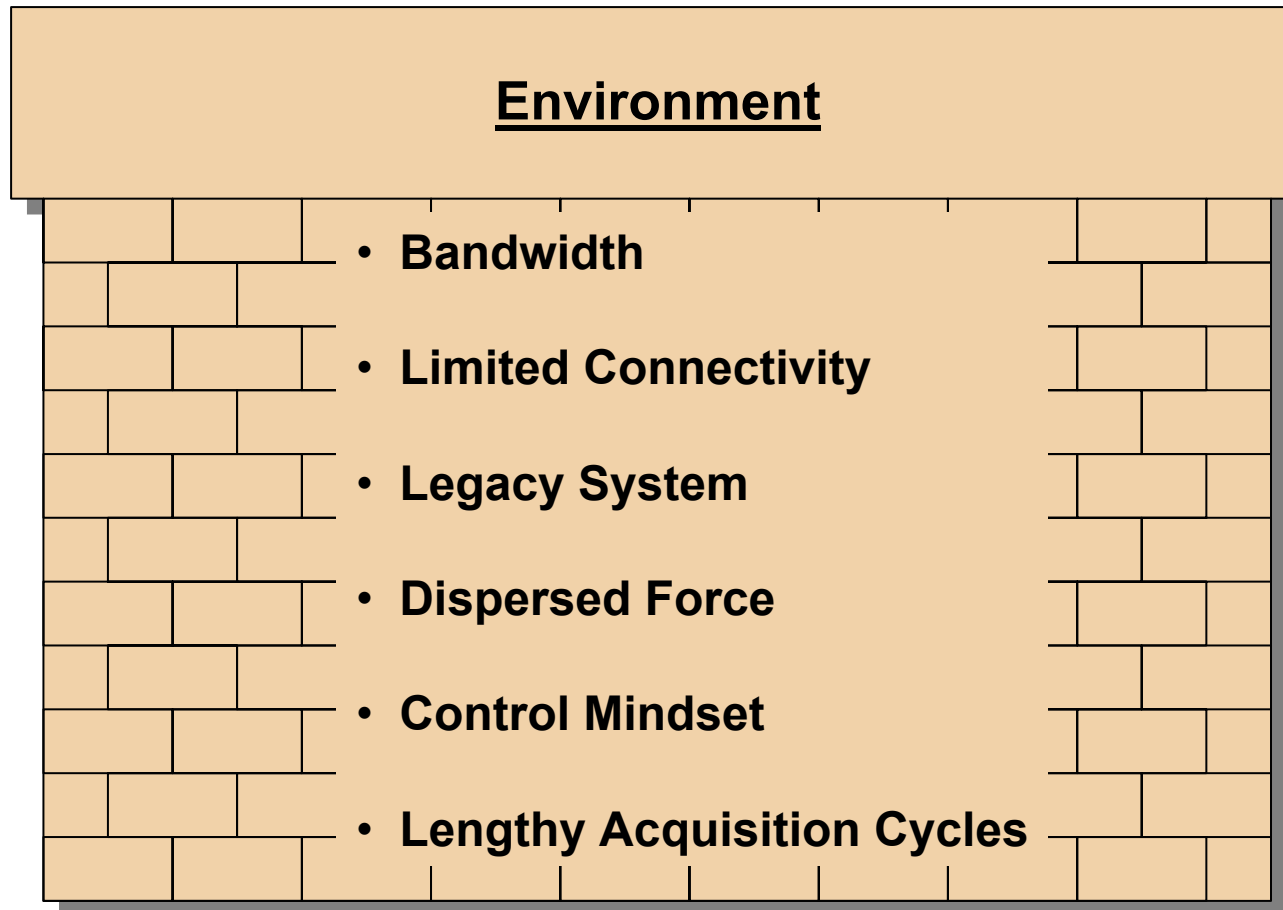


2. Problems Solved by Ultra-Thin-Rich-Client User Interface Technology

3. Example Applications of UTRC-UI Technology

4. Technical Architecture and Industry Standard

5. Value Proposition of UTRC-UI Technology



Source: Network Centric Innovation Center



Challenges with Current Web Approach

End-User Experience Issues

- **Page-based navigation**
- **No desktop look and feel**
- **No real-time data**
- **Slow application response**

Development Issues

- **Multiple development and testing environments**
- **Limitations in GUI design**
- **Security concerns**
- **Limited options for application performance and functionality**



UTRC-UI Solution


- **Rich software functionality - yet thin client - zero footprint**
- **On average 10x faster than HTML**
- **Event-driven Alerts**
- **Real-time data**
- **Secure**
- **Own channel outside browser**
- **Branded desktop icon - no navigation**
- **Easy distribution via e-mail or browser**
- **Standards: Java, C++, SSL; J2EE, XML**

A large, light gray circular callout box with a thin black border and a subtle drop shadow, containing text about the value of UTRC-UI technology.

**UTRC-UI Technology
Creates Value
By Improving
Business Applications
And by Reducing
Systems costs**



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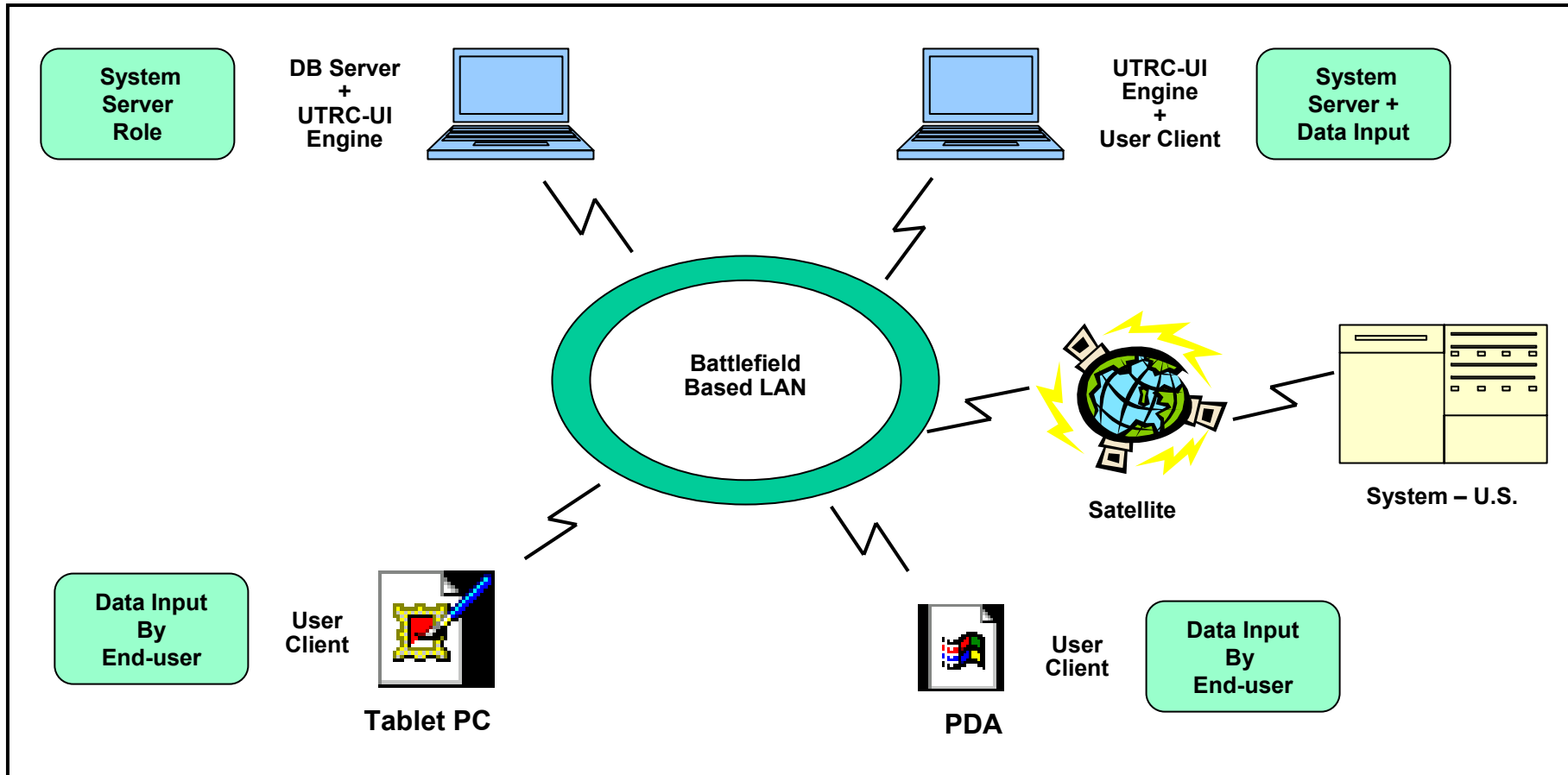
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Mini-Case 1: Real-time Deployment of CSS

Combat Support System Deployment Configuration

ILLUSTRATIVE





Droplets™ Improved User Interaction Screens

ILLUSTRATIVE

Original CSS Screens

Improved Screen

The diagram illustrates the consolidation of multiple CSS screens into a single interactive screen. On the left, three separate CSS screens are shown, each with its own header and data tables. On the right, a single improved screen is shown, which integrates the data from the original screens into a unified interface.

Original CSS Screens:

- AM555D - TURN IN SELECTION (SSN ORG SHOP):** Shows a table with columns: TURN IN QTY, DOC#, LOT#, CC, QTY AVAIL, STRUCTURE, LOCATION, CAT CD. Data rows include: (1, S640CE13100005, LC-00L509-054, A, 54, B9464, 2016-05, D), (116, S640CE13100005, LC-00L509-054, A, 116, B9464, 640CE, D), (300, S640CE13100005, LC-00L509-054, A, 300, B9464, 640CE2035-04, D).
- AM555E - TURN IN CONFIRMATION (SSN ORG SHOP):** Shows a table with columns: DOC#, LOT#, CC, TURN IN QTY, STRUCTURE, LOCATION, CAT CD. Data row: (S640CE13100005, LC-00L509-054, A, 1, B9464, 2016-05, D).
- AM555A - TURN IN:** Shows a form with fields for Type Turn-In (Custody - Asset), Doc #, NSN (1305000286574), Lot #, Structure, Location, Proj Cd, and Level Bypass. Buttons: HELP, RESET, SUBMIT.

Improved Screen:

Single System: For Official Use Only

Accountability Inspection Storage Maintenance General Reports Admin Help

Page: 517 GO AM517A AM108A AM555A

AM555A - Turn-in

Type Turn-In: Custody - Asset Complete Round - Doc # DIFM Expenditure FOB

Doc #: -or- Org/Sh: 640CE

NSN: 1305000286574

Lot #:

Structure: Location:

Proj Cd: Level Bypass

[Get Turn-in Selection Data]

Turn-in Qty	Doc #	Lot #	CC	Qty Avail	Structure	Location	Cat Cd
	S640CE13100005	LC-00L509-054	A	84	B9464	2016-05	D
	S640CE13100005	LC-00L509-054	A	116	B9464	640CE	D
	S640CE13100005	LC-00L509-054	A	200	B9464	640CE2035-04	D
	S640CE13100005	LC-00L509-054	A	400	B9464	640CE2042-1	D
	S640CE13100005	LC-00L509-054	A	6000	7008	08A024A002A	D
	S640CE30340010	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30340011	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30340012	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30350013	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30350014	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30350015	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30360016	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30360017	LC-00L509-054	A	1	7031	31A005A002F	D
	S640CE30360018	LC-00L509-054	A	1	7031	31A005A002F	D

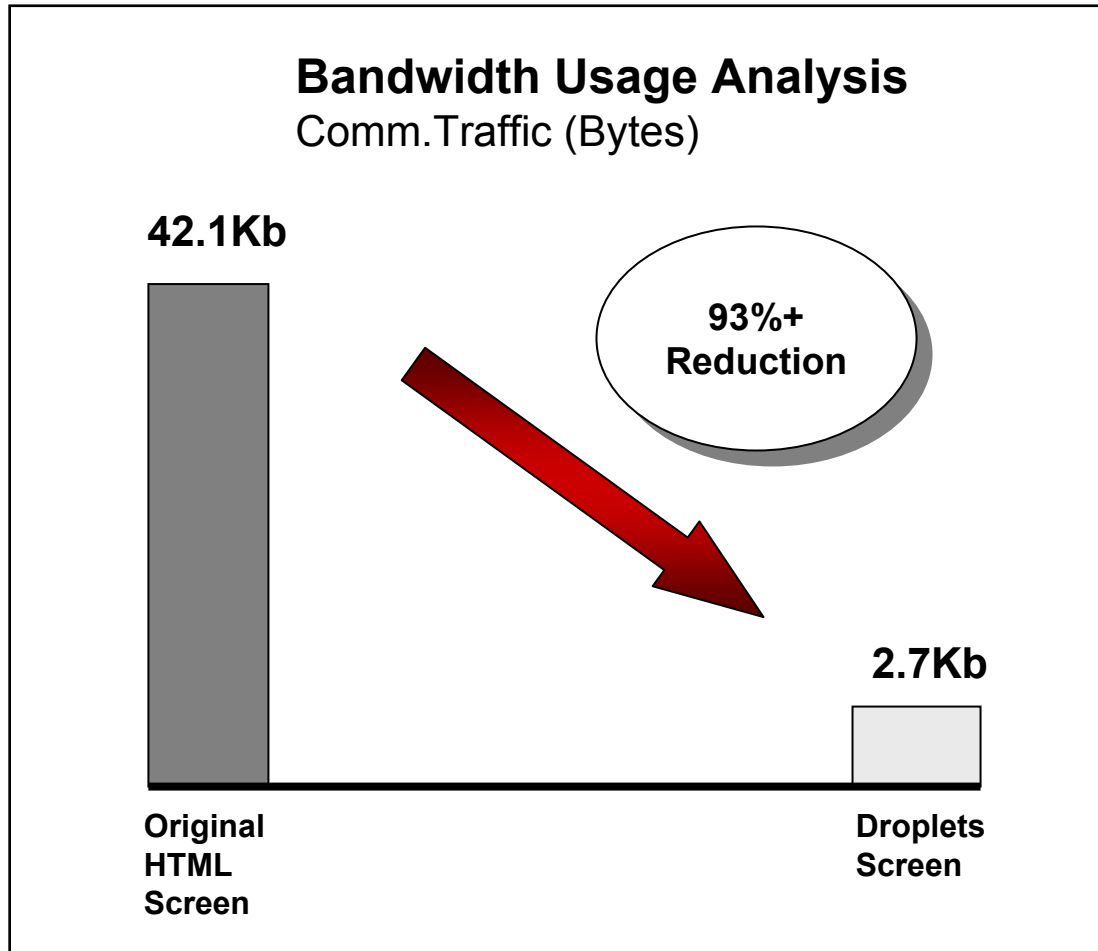
Movement Required

UTRC-UI Collapsed Multiple CSS Page Screens Into a Single Interactive Screen.



High Performance through Low Bandwidth Consumption

ILLUSTRATIVE



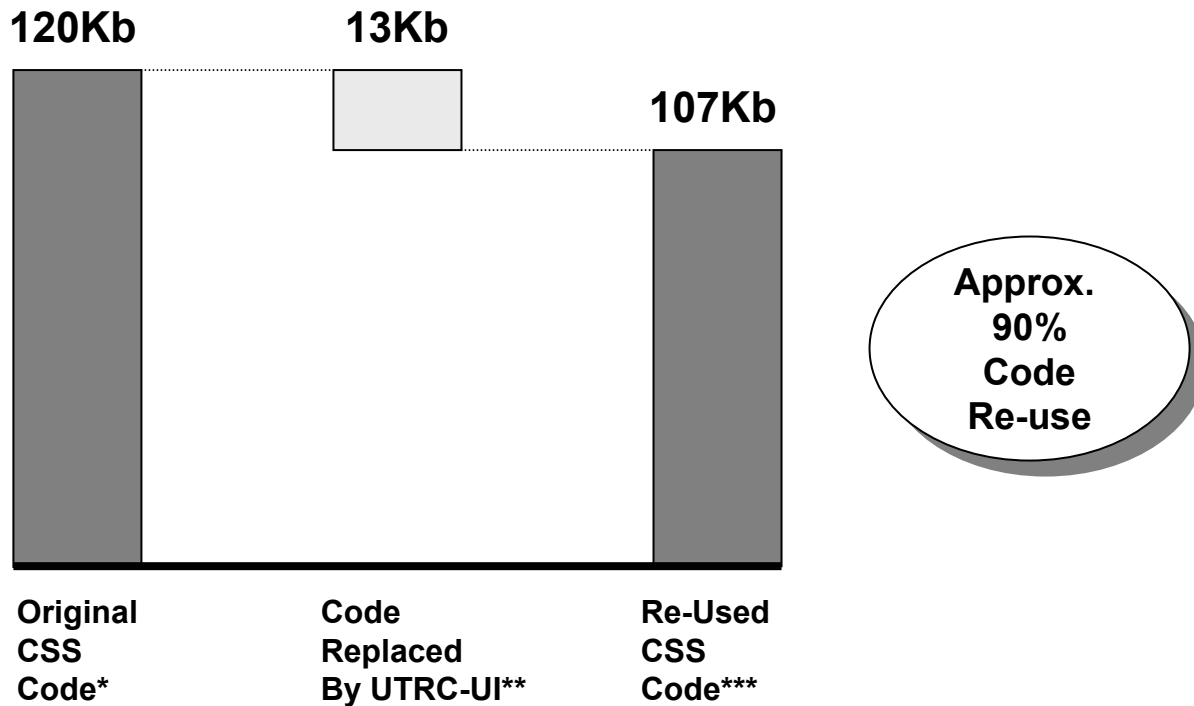
Source: *Droplets Analysis – Screen 517*



Investment Protected through 90% Re-use of Existing Code

ILLUSTRATIVE

Code Re-Use Analysis: Total Asset Inquiry Screen Code Size (Bytes)



* Servlets, JSP and JavaScript

** JSP and JavaScript

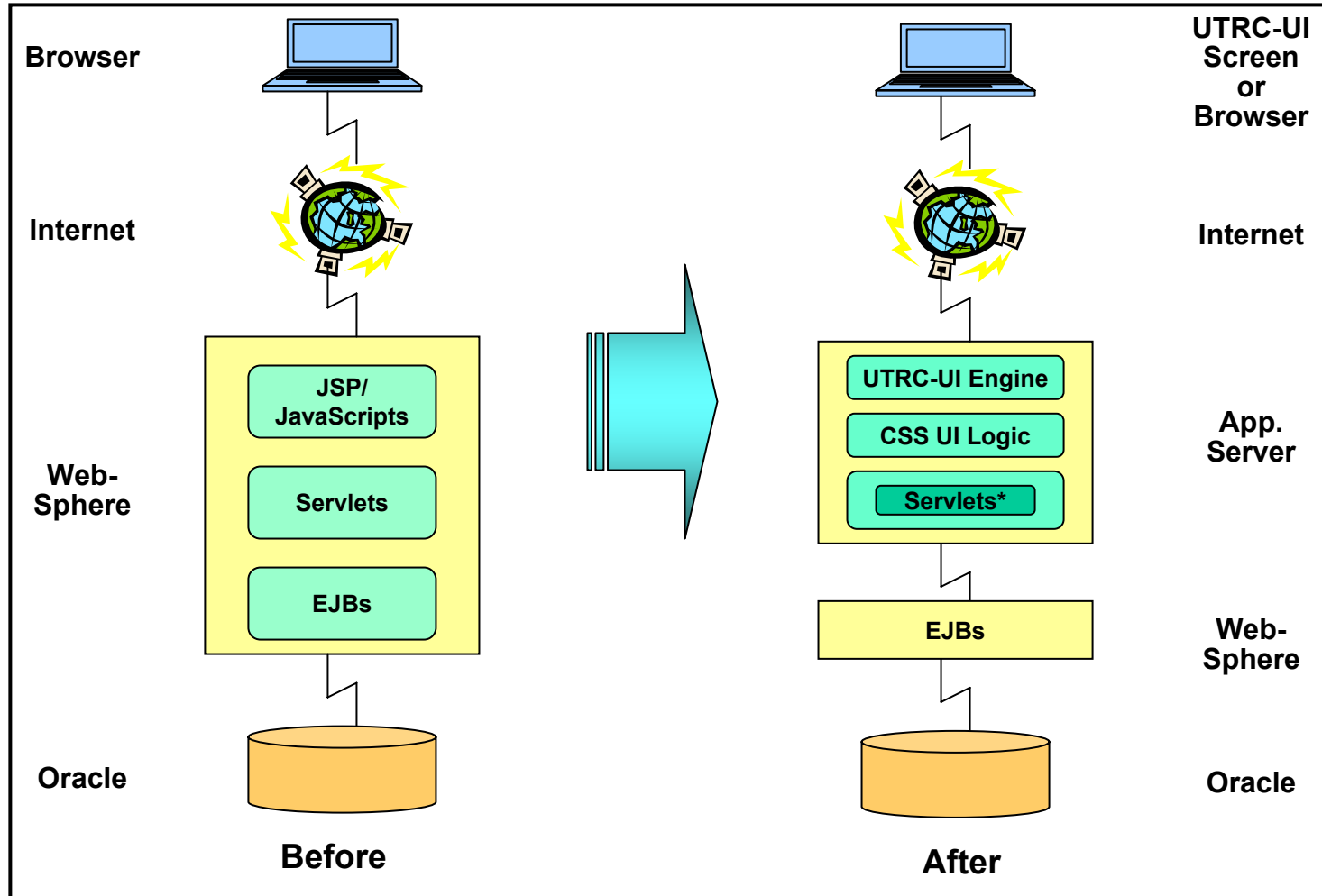
*** Servlets

Source: Droplets Analysis



Fits within AF Standard Architecture Framework

Multi-tiered CSS Architecture





Mini Case 2: Modernizing Legacy Applications

Original Green Screen

```
DD Form 93 (Soldier Information)
SSN: 397845561 Name: BENDT WILL CURTIS Rank: PFC
Insurance Companies: Policy Number:
Notify in Case of Light Injury? NO
Is there a Will? N Location of Will:
Disp of Remains to: Relation:
Lives with Soldier?
Unit/Street:
City: State: ZIP Code:
Foreign State: Country: APO/FPO:
Gateway Area Code: Foreign Postal Code:
Phone Number:
Remarks:
F3 = SAVE and proceed; F8/F6 = ADDRESS Choices; F6 = CANCEL
Enter an Insurance Company
HELP SAVE CANCEL CMD-MENU CHG-KEY
```

Improved Web Screen

Welcome Station

SSN: Name: Rank: PFC

Date Signed In: 05-04-2003 Time Signed In: 19:32

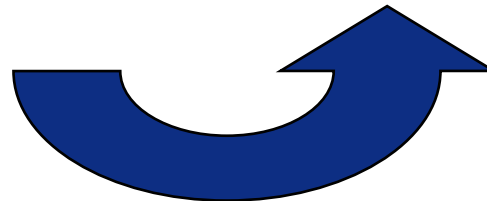
Sex: M Accompanied: Yes

Files Present: 201: Dental: Medical: Finance: Education:

Enlisted	Officer	Warrant Officer
PMOS: <input type="text"/>	AOC: <input type="text"/>	PMOS: <input type="text"/>
ASI: <input type="text"/>	Skill: <input type="text"/>	ASI: <input type="text"/>
DA Form 2A: <input type="text"/>	DA Form 2B: <input type="text"/>	DA Form 2B: <input type="text"/>
DA Form 2-1: <input type="text"/>	DA Form 4037: <input type="text"/>	DA Form 4037: <input type="text"/>
Promotion Pkt: <input type="text"/>		

Do you want to create a SIDPERS arrival transaction now? Yes

Save and Proceed Cancel





Real-time Performance at 3300 Baud Rate

Interaction Type	Avg. App. Response Time (Seconds)	Avg. UTRC-UI Traffic Size (Bytes)	UTRC-UI Payload in Comm. Packet (Percent)
Data screen components (drop down fields)	0.5	218	17
Data entry (text and number entry)	2	371	21
Screen change (new screen loading)	6	2,014	70
App. start up (new session initiation)	38	14,223	7



Communications Over EPLRs and SINGARs

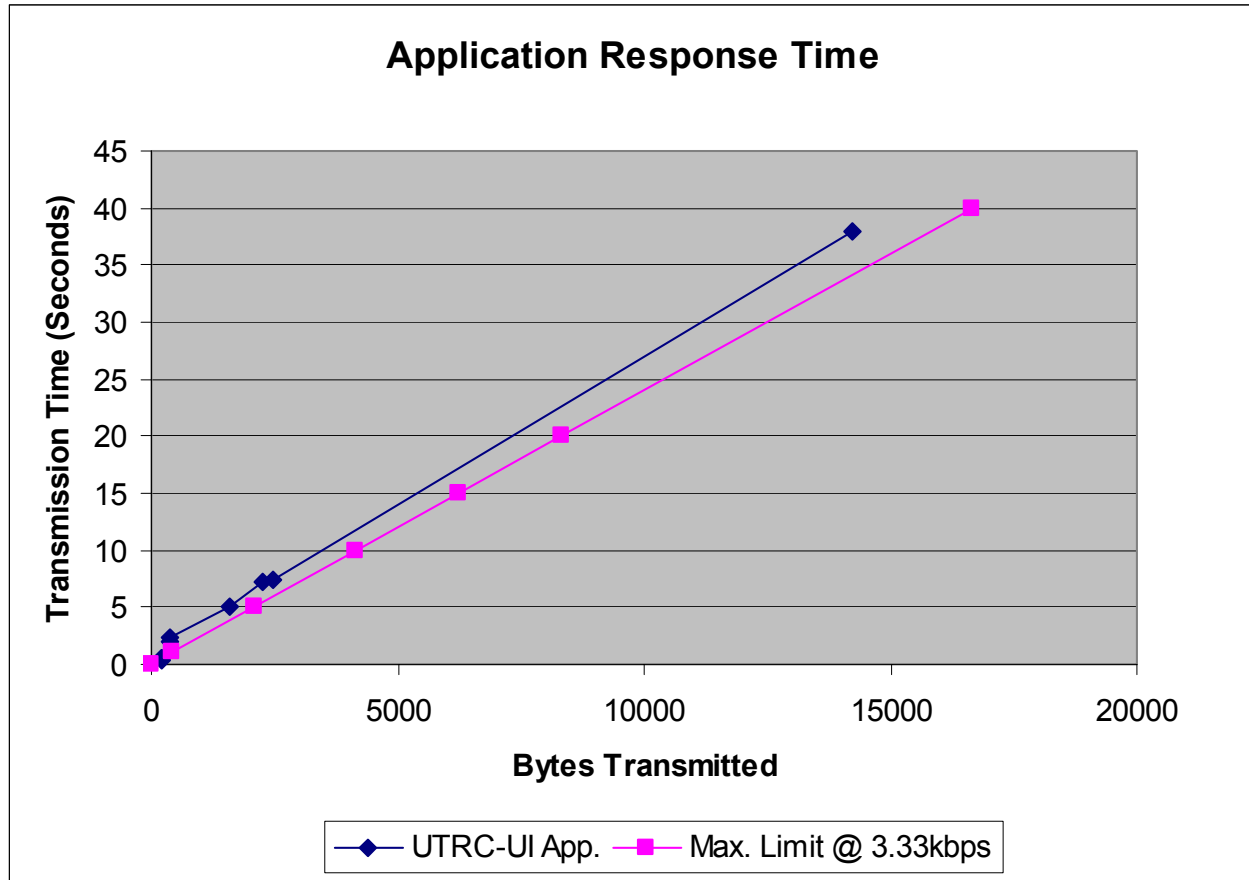

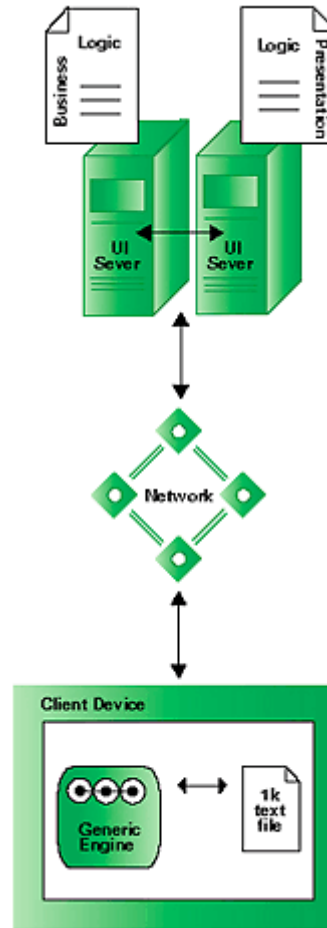




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Architecture Schematic






Industry Standards

- **Standards:** Java, C++, SSL, J2EE, XML
 - **Java Server Faces:** Sitting Expert on Java Community Process
 - **IBM Tested:** WebSphere, eServers and Linux (zSeries, iSeries, pSeries-WIP, xSeries)
 - **Sun Tested:** Solaris, Sun Tone Certified
 - **Oracle Tested:** 9i, JDeveloper
 - **Borland Supported:** JBuilder 8
 - **Microsoft Tested:** Windows 2000, Windows NT, Windows 95 or higher
 - **PDA Environment:** Personal Java, Linux
 - **Portals:** Oracle, Sun ONE, Plumtree, Websphere, any J2EE compliant portal
-

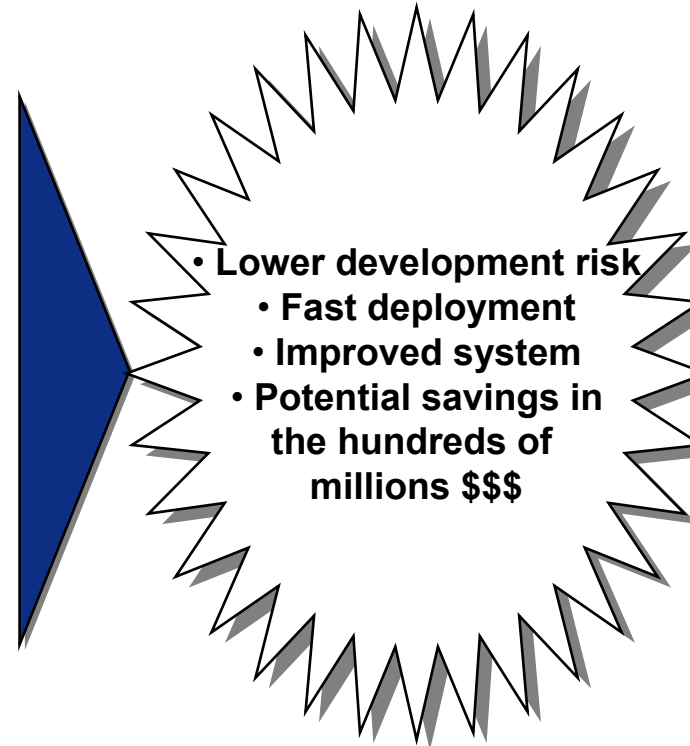


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Potential Business Impact

Key Issues	UTRC-UI Value to NCW	Solution Effective.*	Tech. Complex.**	Low Cost
Productivity (End-User)	Unified system front-end	●	○	●
Usability	Consolidation of multiple screens; Eliminate web pages	●	○	●
Access Points	Web, Wireless, Desktop	●	○	●
Legacy Extension	Extend ROI; Web enable, Enhance usability	●	●	●
D,T, M, & S***	Central control (server-based)	●	○	●
Reliability & Performance	High performance: 90%+ bandwidth reduction	●	○	●
Security	Inherently secure: NorthCom, NAS	●	○	●



* Solution Effectiveness

** Technology Complexity

*** Deployment, Training, Maintenance, & Support





Implications to Network Centric Warfare

- 1. Bandwidth reduction of 90%+ [\$\$\$ savings]**
- 2. Real-time data [Information superiority]**
- 3. High security [Dominant position]**
- 4. Improved usability [Productivity increase]**
- 5. Multi-platform deployment from single code base (web, desktop, wireless) [faster development, \$\$\$ savings]**
- 6. Industry standards based [low risk, \$\$\$ savings]**

Vision Delivered Today

