UK University Of Kentucky

University Geographic Information System

Introductions

UNIVERSITY OF KENTUCKY
Facilities Management

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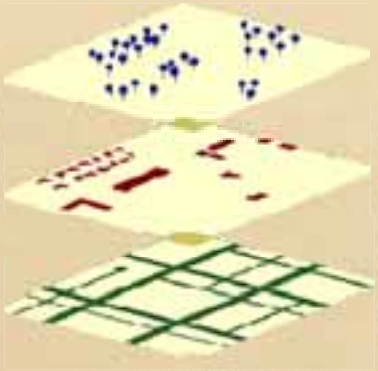
Presentation Topics

- University of Kentucky GIS (U-GIS)
- **GIS & Facilities Management**
- **Custom GIS Facility Management System**
- **System Design**
- **System Demo**
- **Key Decisions**
- **Next Steps**

U-GIS

One Map

Database



Current
Accurate
Campus-wide
Information

Why create a U-GIS?

- To provide “one” Facilities map & interior space interface
- To provide a graphical interface to diverse information sets
- To graphically analyze data for better decisions
- To fill the need for accessing data from many different platforms
- To allow users to manipulate & extract consolidated information
- To share information across units eliminating redundancies

U G I S

Accessibility

Police

Parking

Student Housing

Bus Routes

Health Care

Weather Shelters

eBARS

SAP

Campus Utilities

Transportation

Athletics

Wireless Access

AMERESCO

KRONOS

Interior Space

Environmental Health & Safety

Maps & Directions

Construction Capital Projects

eFacTS (electronic Facility Technology System)

UKIGS

Accessibility

Police

Parking

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Campus Utilities

Wireless Access

BIG BLUE GOES GREEN

Transportation

Athletics

AMERESCO
Green • Clean • Sustainable

KRONOS

eFacTS (electronic Facility Technology System)

Interior Space

EH&S

Environmental Health & Safety

Maps & Directions

Construction Capital Projects

Focus Areas for U-GIS

- **Data Collection:** Organize, verify and collect data
- **Consolidation:** Reorganizing resources to support system
- **eFacTS:** Facilities Archives (GIS, CAD, Archives, Utilities, Imagery)
- **eBARS:** Plant Assets (Space, Equipment, & Vehicle Inventory)
- **SAP:** UK's ERP (including HR, FI, CM, MM, PM, other)

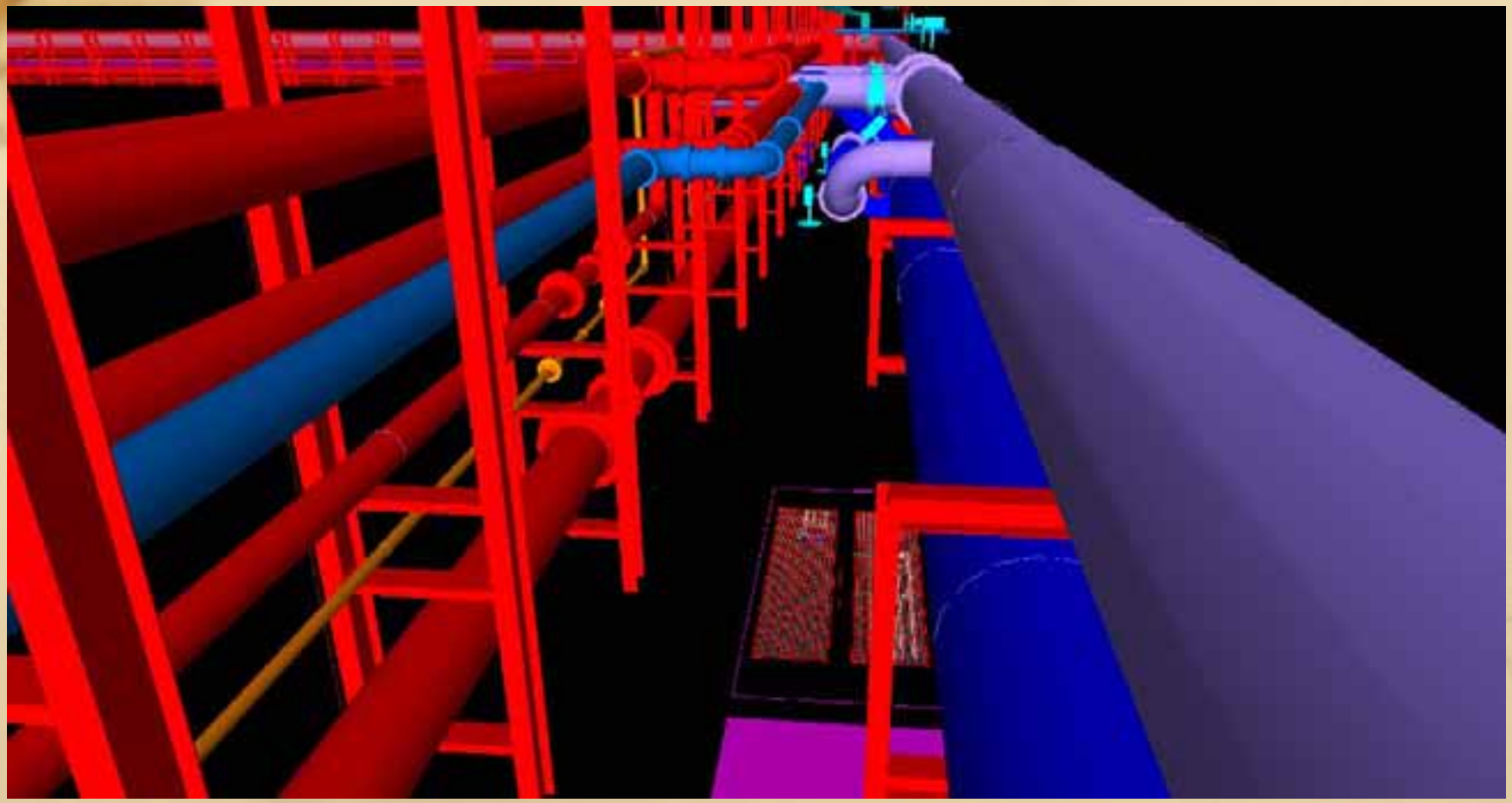
GIS & Facilities Management

- EXAMPLES -

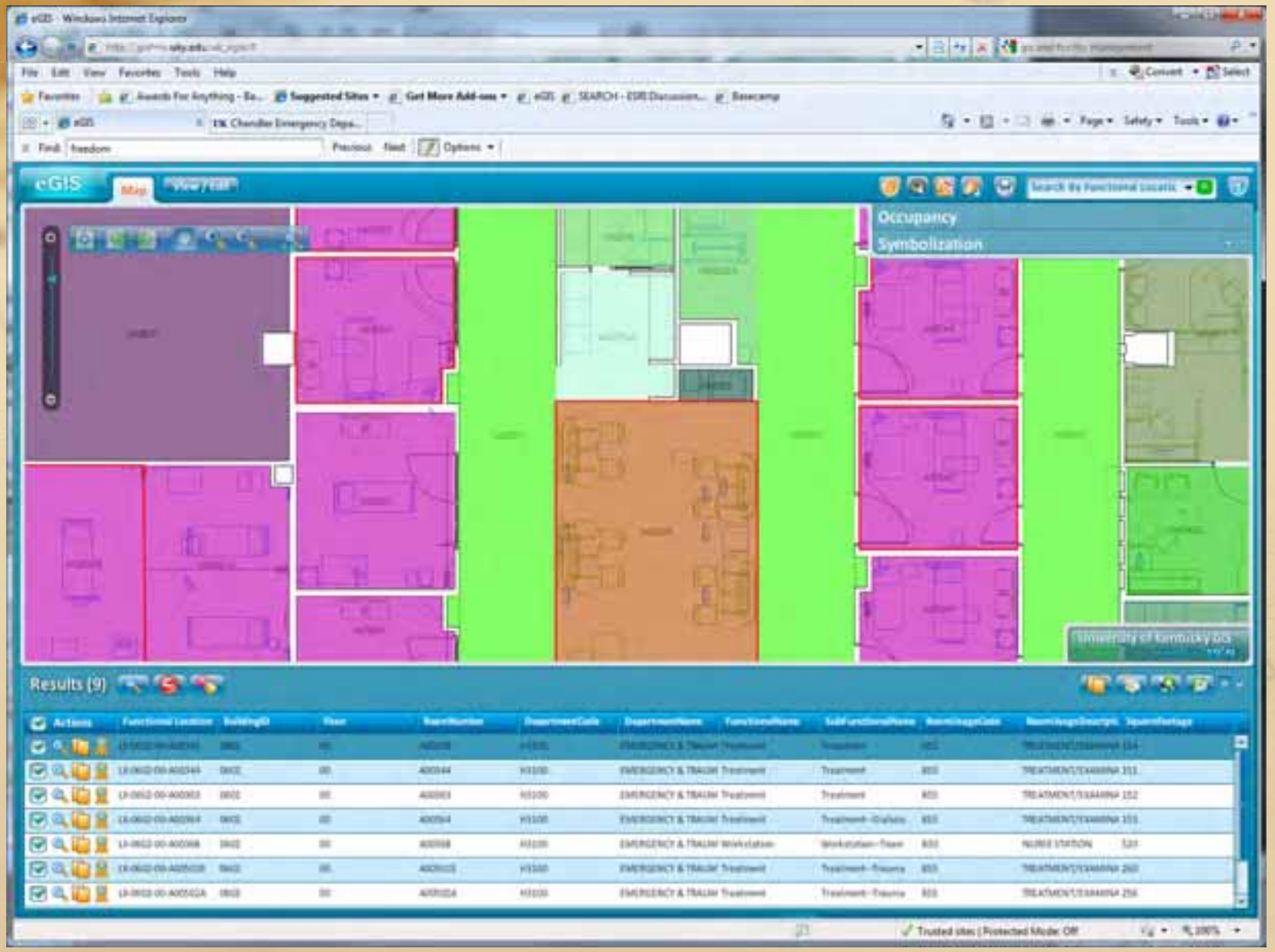
GIS & Facilities Management

GIS & Facilities Management

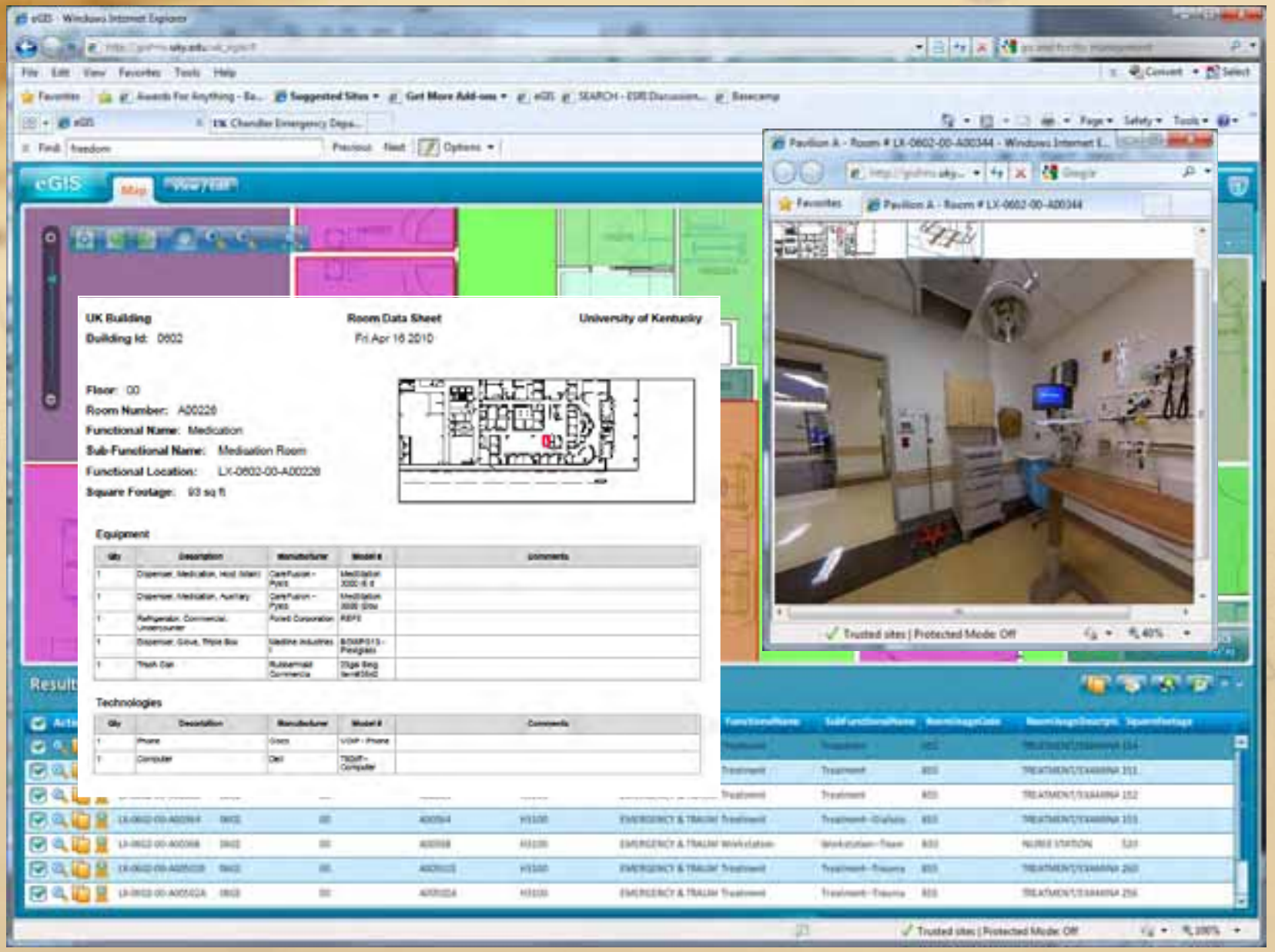
GIS & Facilities Management



GIS & Facilities Management



GIS & Facilities Management



New UK Chandler Hospital

- **2 Bed Towers**
- **16 Floors**
- **Total 1.2 million square feet**
- **State-of-the-art Level 1 Trauma Center**
- **System needed to support occupancy**

System Design

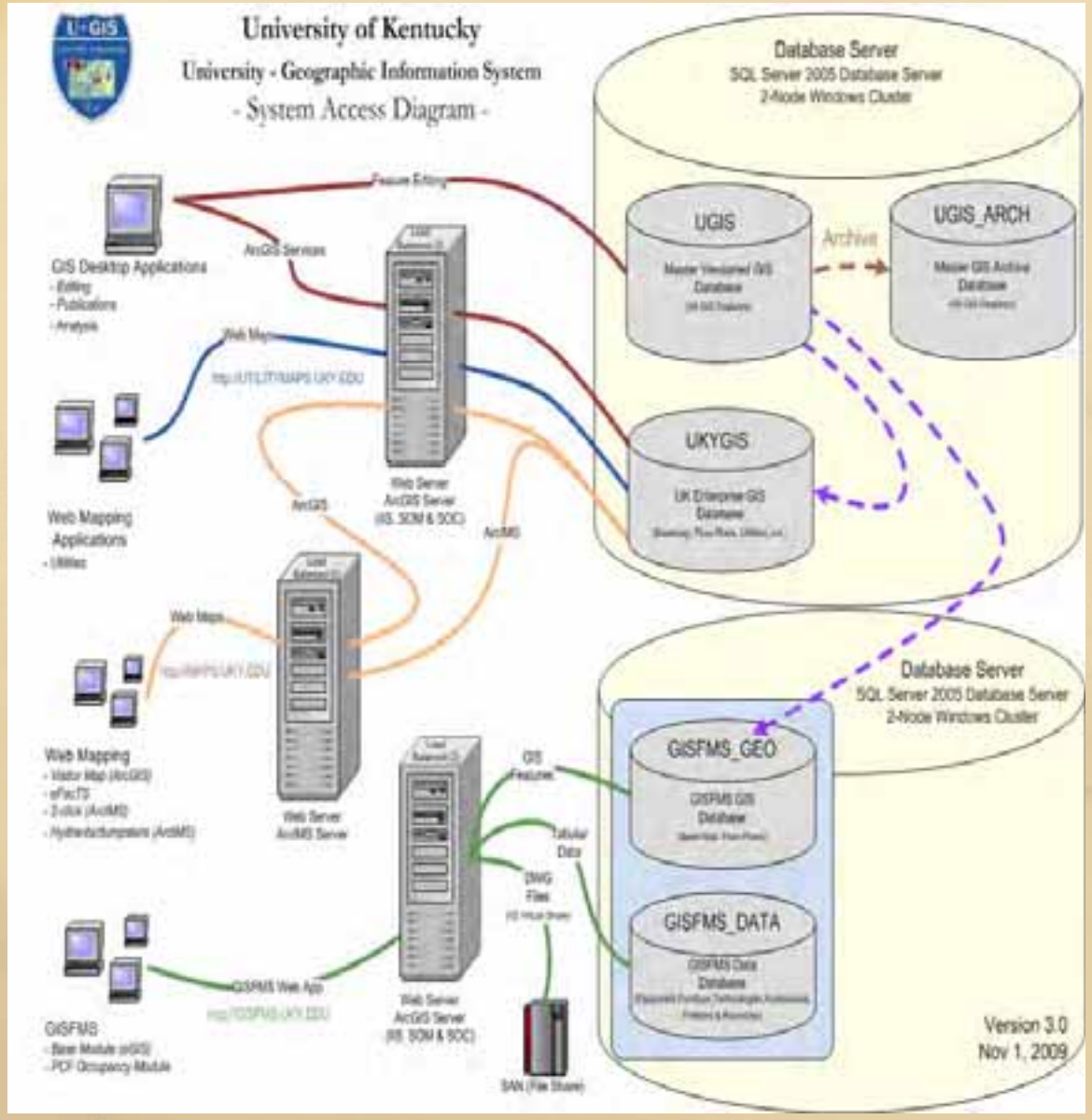
- **GIS License & Software**
- **Enterprise Servers**
- **ERP Naming Standard**
- **Graphical Interface**
- **Single Sign-On**
- **Flexible DB Design**
- **Service Architecture**
- **Stored Procedures**

System Design

GIS License & Software

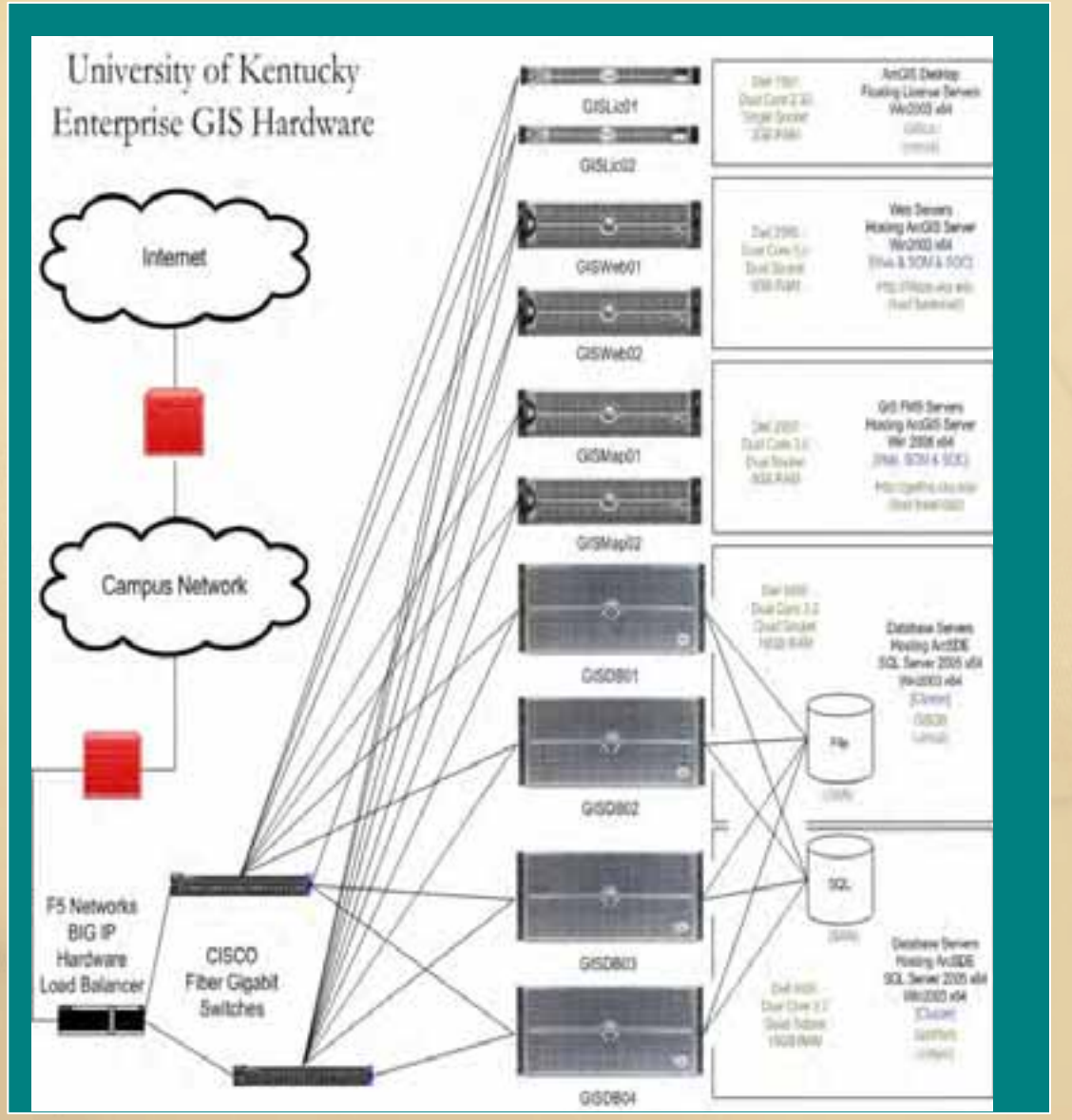
System Design

Enterprise Servers



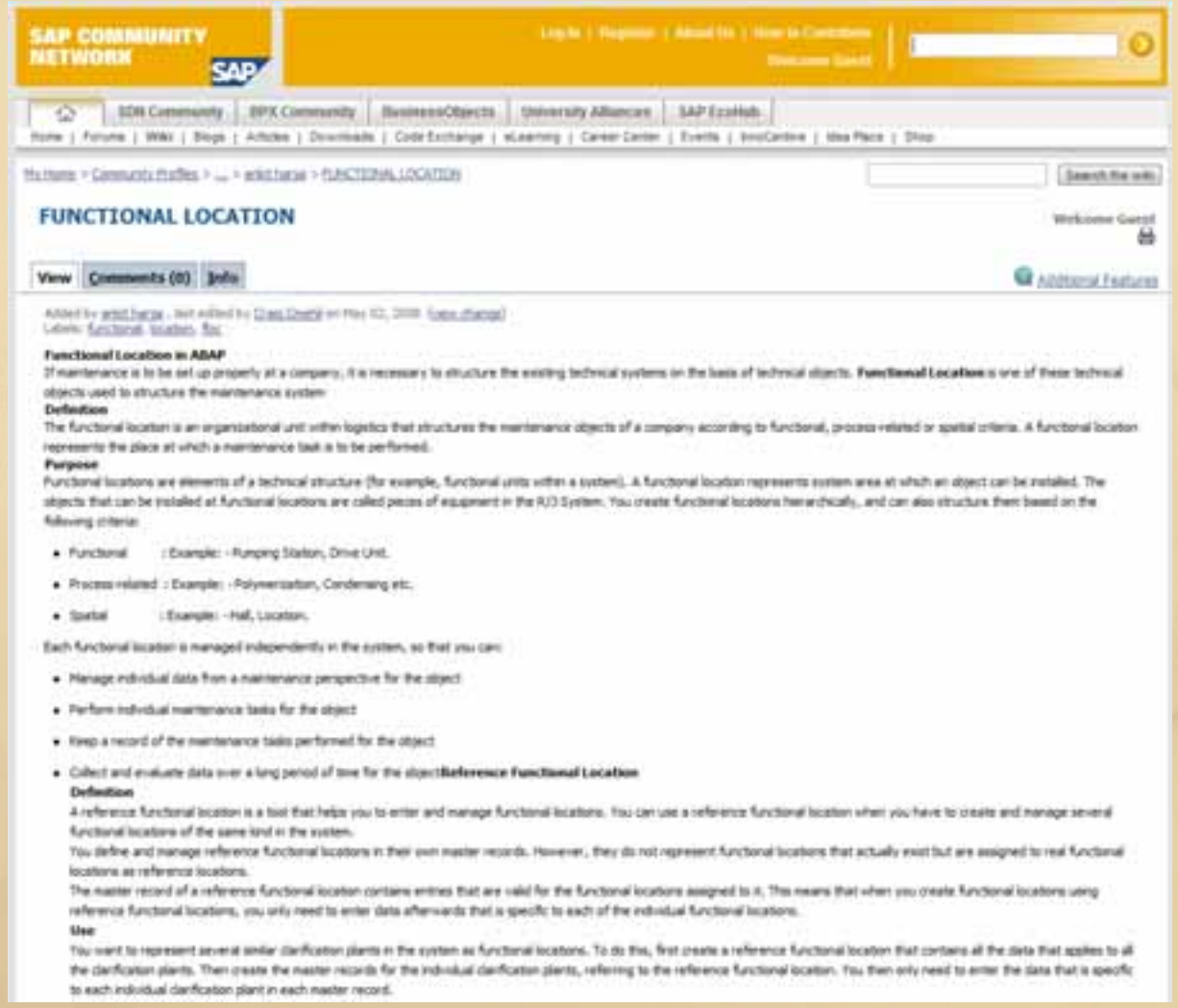
System Design

Enterprise Servers



System Design

ERP Naming Standard



System Design

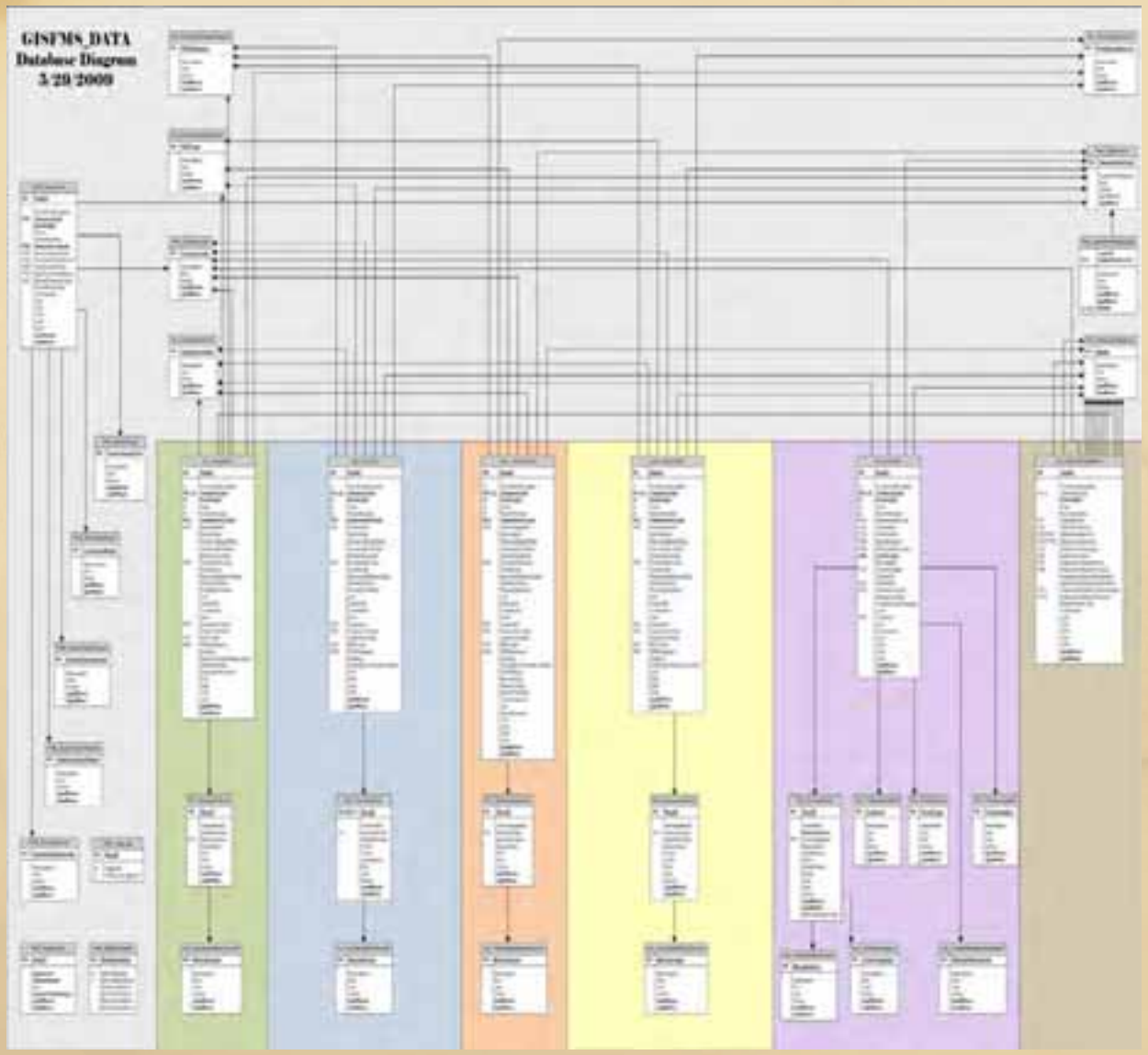
Graphical Interface

System Design

Single Sign-On

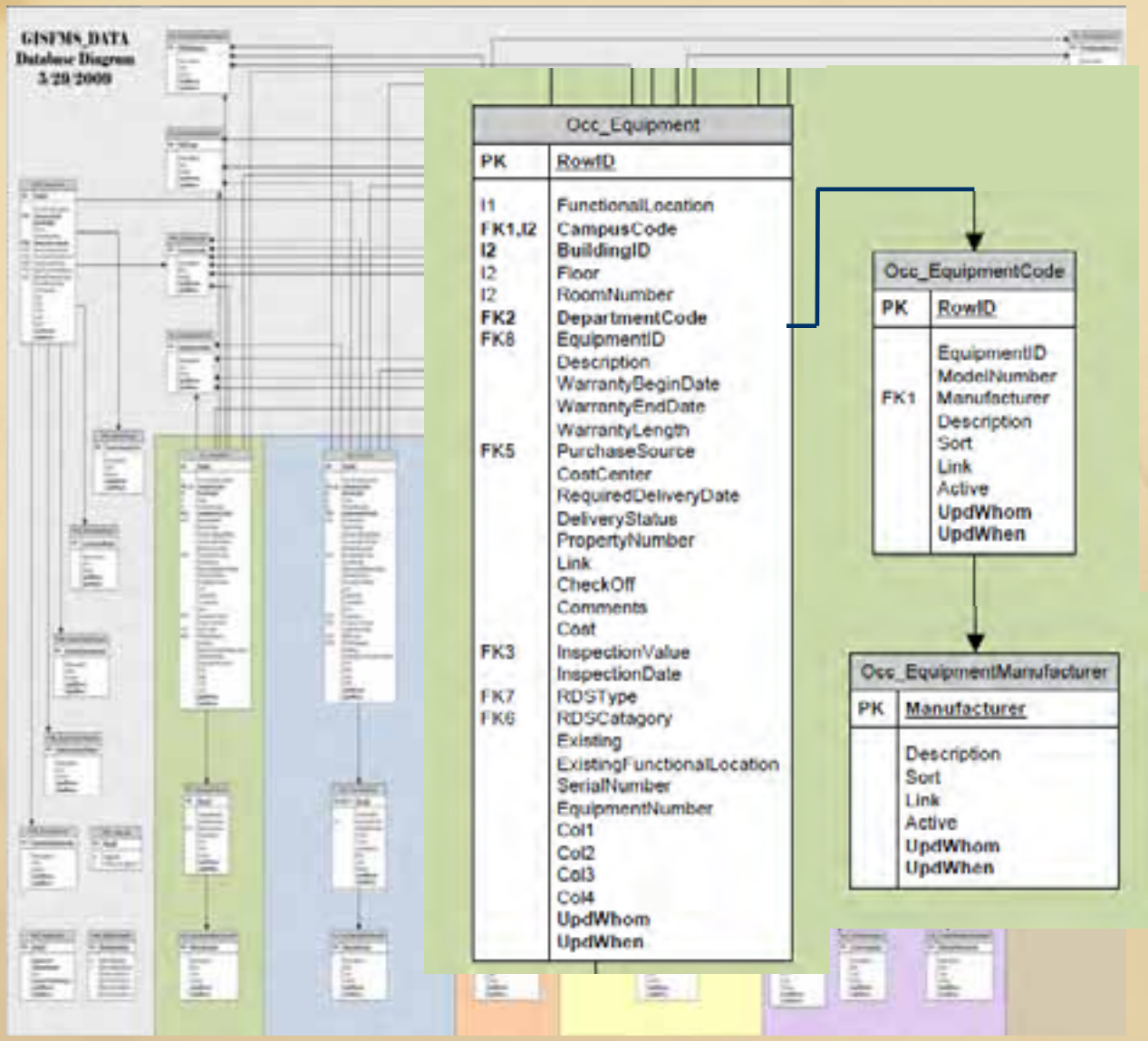
System Design

Flexible DB Design



System Design

Flexible DB Design

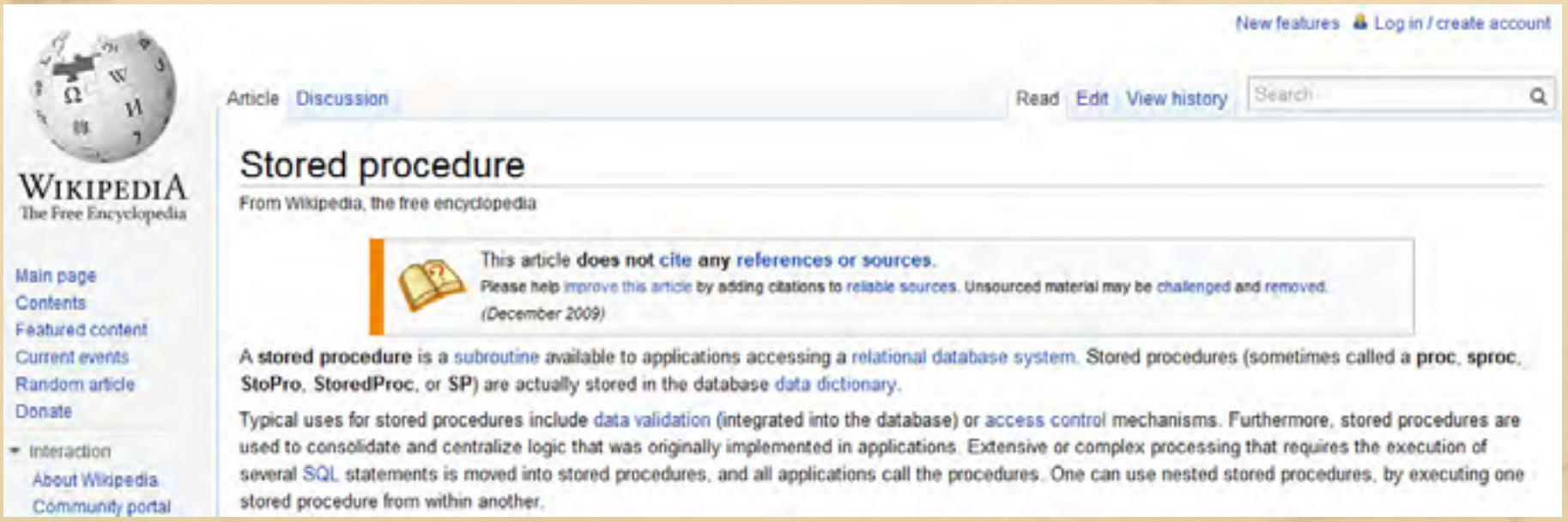


System Design

Service Architecture

System Design

Stored Procedures



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Stored procedure

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(December 2009)

A **stored procedure** is a subroutine available to applications accessing a relational database system. Stored procedures (sometimes called a **proc**, **sproc**, **StoPro**, **StoredProc**, or **SP**) are actually stored in the database data dictionary.

Typical uses for stored procedures include data validation (integrated into the database) or access control mechanisms. Furthermore, stored procedures are used to consolidate and centralize logic that was originally implemented in applications. Extensive or complex processing that requires the execution of several SQL statements is moved into stored procedures, and all applications call the procedures. One can use nested stored procedures, by executing one stored procedure from within another.

System Design

Stored Procedures

Table Name	Includes Additional Departmental Security	Stored Procedure Name	All Mod		Occupancy Module								Adust Count
			gFacMgmt_GISFMS_Admins	gFacMgmt_GISFMS_Public	gFacMgmt_GISFMS_Asset_Viewer	gFacMgmt_GISFMS_RoomUse_Editor	gFacMgmt_GISFMS_OCC_Accessories_Editor	gFacMgmt_GISFMS_Equipment_Editor	gFacMgmt_GISFMS_Finishes_Editor	gFacMgmt_GISFMS_Furniture_Editor	gFacMgmt_GISFMS_OpenClosedStatus_Editor	gFacMgmt_GISFMS_Technologies_Editor	
Total Procedures			AD Roles (Checkmark = Execute Permission)										230
		Select Procedures											64
FMS_BldgNameHist	No	N/A											0
FMS_CampusCode	No	pFMS_CampusCode_Sel	√		√	√	√	√	√	√	√	√	1
FMS_Department	No	pFMS_Department_Sel	√		√	√	√	√	√	√	√	√	1
FMS_DepartmentalSecurity	No	pFMS_DepartmentSecurity_Sel	√										1
FMS_FunctionalArea	No	pFMS_FunctionalArea_Sel	√		√	√	√	√	√	√	√	√	1
FMS_FunctionalName	No	pFMS_FunctionalName_Sel	√		√	√	√	√	√	√	√	√	1
FMS_HyperLinks	No	pFMS_HyperLinks_Sel	√	√	√	√	√	√	√	√	√	√	1
FMS_LastLogin	No	N/A											0
FMS_RoomPressureType	No	pFMS_RoomPressureType_Sel	√		√	√	√	√	√	√	√	√	1
FMS_RoomUsage	No	pFMS_RoomUsage_Sel	√		√	√	√	√	√	√	√	√	1
FMS_RoomUse	No	pFMS_RoomUse_Sel	√	√	√	√	√	√	√	√	√	√	1
FMS_SubFunctionalName	No	pFMS_SubFunctionalName_Sel	√		√	√	√	√	√	√	√	√	1
Occ_Accessories	Yes	pOcc_Accessories_Sel	√		√		√						1
Occ_AccessoriesCode	No	pOcc_AccessoriesCode_Sel	√		√		√						1

System Design

Stored Procedures

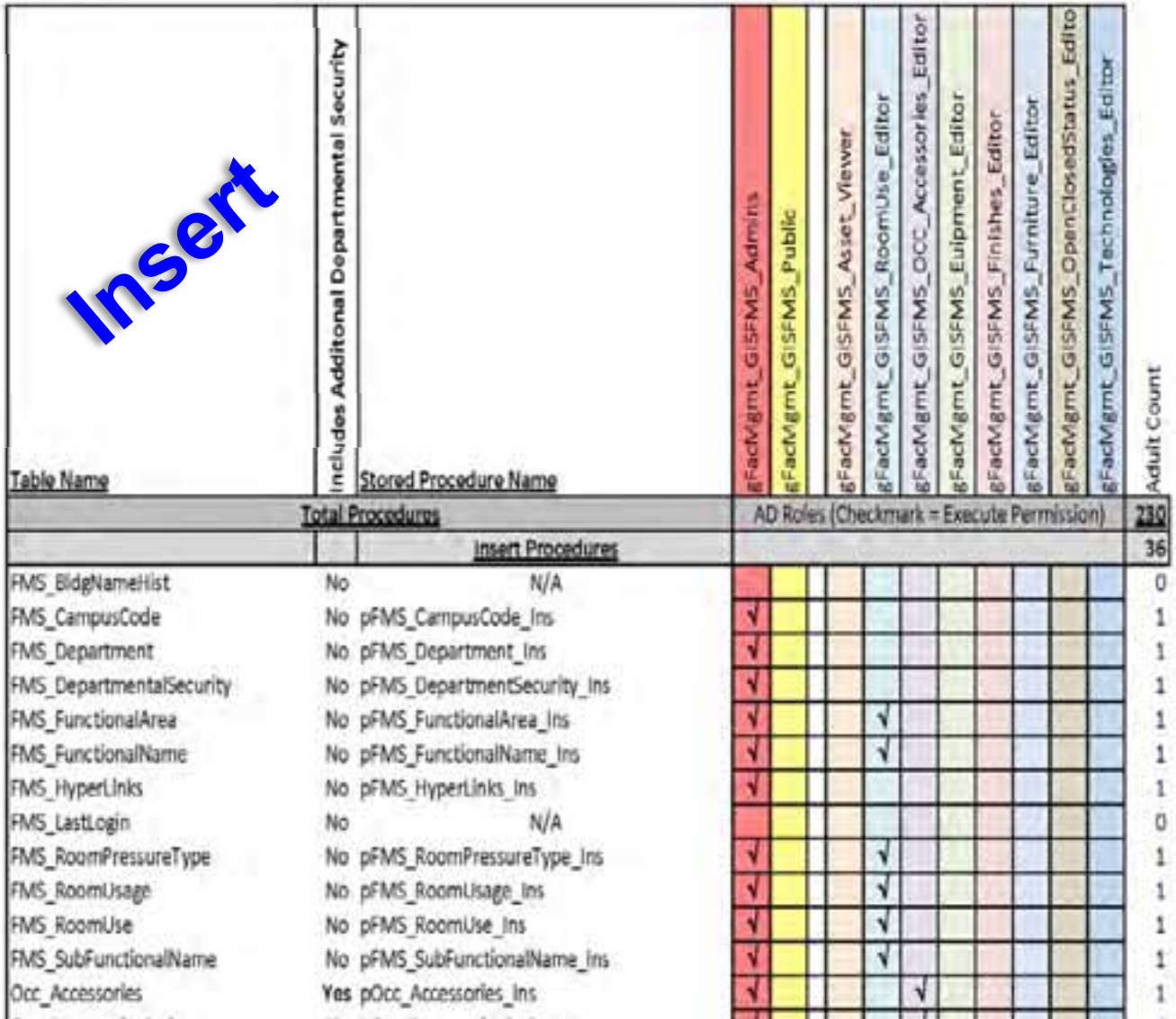

Table Name	Includes Additional Departmental Security	Stored Procedure Name	gFacMgmt_GISFMS_Admins	gFacMgmt_GISFMS_Public	gFacMgmt_GISFMS_Asset_Viewer	gFacMgmt_GISFMS_RoomUse_Editor	gFacMgmt_GISFMS_OCC_Accessories_Editor	gFacMgmt_GISFMS_Euipment_Editor	gFacMgmt_GISFMS_Finishes_Editor	gFacMgmt_GISFMS_Furniture_Editor	gFacMgmt_GISFMS_OpenClosedStatus_Edito	gFacMgmt_GISFMS_Technologies_Editor	Adult Count
Total Procedures			AD Roles (Checkmark = Execute Permission)										230
		Insert Procedures											36
FMS_BldgNameHist	No	N/A											0
FMS_CampusCode	No	pFMS_CampusCode_Ins	√										1
FMS_Department	No	pFMS_Department_Ins	√										1
FMS_DepartmentalSecurity	No	pFMS_DepartmentSecurity_Ins	√										1
FMS_FunctionalArea	No	pFMS_FunctionalArea_Ins	√			√							1
FMS_FunctionalName	No	pFMS_FunctionalName_Ins	√			√							1
FMS_HyperLinks	No	pFMS_HyperLinks_Ins	√										1
FMS_LastLogin	No	N/A											0
FMS_RoomPressureType	No	pFMS_RoomPressureType_Ins	√			√							1
FMS_RoomUsage	No	pFMS_RoomUsage_Ins	√			√							1
FMS_RoomUse	No	pFMS_RoomUse_Ins	√			√							1
FMS_SubFunctionalName	No	pFMS_SubFunctionalName_Ins	√			√							1
Occ_Accessories	Yes	pOcc_Accessories_Ins	√				√						1

System Design

Stored Procedures

Update

Table Name	Includes Additonal Departmental Security	Stored Procedure Name	gFacMgmt_GISFMS_Admins	gFacMgmt_GISFMS_Public	gFacMgmt_GISFMS_Asset_Viewer	gFacMgmt_GISFMS_RoomUse_Editor	gFacMgmt_GISFMS_OCC_Accessories_Editor	gFacMgmt_GISFMS_Euipment_Editor	gFacMgmt_GISFMS_Finishes_Editor	gFacMgmt_GISFMS_Furniture_Editor	gFacMgmt_GISFMS_OpenClosedStatus_Edito	gFacMgmt_GISFMS_Technologies_Editor	Aduit Count
Total Procedures			AD Roles (Checkmark = Execute Permission)										230
		Update Procedures											41
FMS_BldgNameHist	No	N/A											0
FMS_CampusCode	No	pFMS_CampusCode_Upd	✓										1
FMS_Department	No	pFMS_Department_Upd	✓										1
FMS_DepartmentalSecurity	No	pFMS_DepartmentSecurity_Upd	✓										1
FMS_FunctionalArea	No	pFMS_FunctionalArea_Upd	✓			✓							1
FMS_FunctionalName	No	pFMS_FunctionalName_Upd	✓			✓							1
FMS_HyperLinks	No	pFMS_HyperLinks_Upd	✓										1
FMS_LastLogin	No	N/A											0
FMS_RoomPressureType	No	pFMS_RoomPressureType_Upd	✓			✓							1
FMS_RoomUsage	No	pFMS_RoomUsage_Upd	✓			✓							1
FMS_RoomUse	No	pFMS_RoomUse_Upd	✓			✓							1
FMS_SubFunctionalName	No	pFMS_SubFunctionalName_Upd	✓			✓							1

System Design

Stored Procedures

Delete

Table Name	Includes Additonal Departmental Security	Stored Procedure Name	gFacMgmt_GISFMS_Admins	gFacMgmt_GISFMS_Public	gFacMgmt_GISFMS_Asset_Viewer	gFacMgmt_GISFMS_RoomUse_Editor	gFacMgmt_GISFMS_OCC_Accessories_Editor	gFacMgmt_GISFMS_Eulpment_Editor	gFacMgmt_GISFMS_Finishes_Editor	gFacMgmt_GISFMS_Furniture_Editor	gFacMgmt_GISFMS_OpenClosedStatus_Edito	gFacMgmt_GISFMS_Technologies_Editor	Adult Count
Total Procedures			AD Roles (Checkmark = Execute Permission)										230
		Delete Procedures											36
FMS_BldgNameHist	No	N/A											0
FMS_CampusCode	No	pFMS_CampusCode_Del	√										1
FMS_Department	No	pFMS_Department_Del	√										1
FMS_DepartmentalSecurity	No	pFMS_DepartmentSecurity_Del	√										1
FMS_FunctionalArea	No	pFMS_FunctionalArea_Del	√			√							1
FMS_FunctionalName	No	pFMS_FunctionalName_Del	√			√							1
FMS_HyperLinks	No	pFMS_HyperLinks_Del	√										1
FMS_LastLogin	No	N/A											0
FMS_RoomPressureType	No	pFMS_RoomPressureType_Del	√			√							1
FMS_RoomUsage	No	pFMS_RoomUsage_Del	√			√							1
FMS_RoomUse	No	pFMS_RoomUse_Del	√			√							1
FMS_SubFunctionalName	No	pFMS_SubFunctionalName_Del	√			√							1
Occ_Accessories	Yes	pOcc_Accessories_Del	√				√						1
Occ_AccessoriesCode	No	pOcc_AccessoriesCode_Del	√				√						1

- SYSTEM DEMO -

Key Decisions

- **Finding a contractor w/expertise & flexibility (39 Degrees North)**
- **Choosing Flex for the user interface**
- **Integrating UK's existing CAD floorplan library**
- **Editing tabular data within the same site**
- **Integrating UK's existing single sign-on IDs & security**
- **Implementing role & departmental system permissions**
- **Designing database in-house with stored procedures**

Next Steps...

- **Support next phases of Hospital occupancy –** Ground floor Emergency Department completed Spring 2010, Public Space on Ground and First floors & 6th & 7th floors completed Spring 2011, future occupancy scheduled for Fall/Winter 2011/2012

- **Begin scoping efforts for Facility Management Module** – integrate other UK systems (SAP, eBARS, Space Inventory), incorporate construction pictures, documents, and Facilities-wide archive documents

- **Pursue leveraging and integrating other technologies –**mobile devices, RFID, BIM, wayfinding, video, …

Questions
&
Comments

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