Statement of Work, Rev. 5

Adding Facilities Assets and Locations to Maximo using ActiveG MapEngine

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Summary

It is proposed that Facilities Department assets and locations be added to Maximo and visualized in the map for Work Order Tracking and Service Requests.

In order to accomplish this, it is proposed that ActiveG provide software configuration and development services, along with GIS consulting services to prepare the Maximo environment, as well as to prepare the data necessary to implement this solution.

Scope of Work

ActiveG shall:

1. Build and publish an ESRI-based MXD file with City Hall data, including attribution as specified by Corpus Christi Facilities Management
2. Import this GIS data into Maximo, using the Maximo location hierarchy created by the city.
3. Develop the new functionality noted below.

DWG-to-GIS Conversion

To integrate facilities information into Maximo and digital maps, a DWG-to-GIS conversion is required. This conversion entails taking the city's existing DWG files of building floorplans and digitally converting them to ESRI-compliant GIS features. The GIS models created will be for each floor of a specified building, placed in the correct geospatial context, utilizing the same geospatial reference used for other city GIS data.

Once converted to GIS, this data shall be imported into Maximo to create/link the GIS data with Maximo locations and classifications, thus enabling asset and work management transactions to be performed on city facilities, as well as GIS visualization in Maximo (and other tools) via ActiveG MapEngine.

New MapEngine Functionality

The development necessary for the implementation includes providing MapEngine with the new functionality to handle multi-story buildings. This includes:

1. Adding Map Legend options to toggle between different building floors.
2. Handling Work Order/Service Request cluster display across multiple floors in a coherent manner.
3. Enabling "Up the Hierarchy" spatial searching. This capability exists in MapEngine today but is not utilized by the city at this time. Enabling this will allow a search of an asset that isn't drawn on the map, resulting in the map zooming to the nearest known location relative to that asset. For instance, if the user searches for a fire alarm switch, clicking on a result could pan the map to the room location where the switch is located.

Required preparation by the City of Corpus Christi

For this conversion to be successful, the city's Facilities department shall:

1. Update current DWG files.
    a. The city's DWG drawings will likely need to be updated with certain parameters added to ensure an accurate, smooth conversion to GIS.

   b. This update will require line features drawn in the DWG files to have attribution that allows the walls of the building to be detected and automatically inferred by an ESRI conversion tool.
   c. ActiveG shall work with city personnel to make sure these steps are taken appropriately.
2. Provide ActiveG DWG files for each floor of each building city personnel desire to be viewed in Maximo.

Assumptions

1. No more than one building's single floor/level will be displayed at any given time. The implication here is that the user viewing the 1st floor a given building will not be simultaneously looking at the 1st or other floor of another building.

2. For this phase of the project, the facilities locations shown on the map shall be limited to:
   a. Rooms
      i. Restrooms
      ii. Offices
      iii. Storage
   b. Escalators
   c. Elevators
   d. HVAC
      i. Air Handlers
      ii. Chillers
      iii. Boilers
   e. Departments

   If more location types are required in Phase 1, more service hours will be necessary.

3. Facilities Assets and Locations will necessarily have a floor designator in the Maximo database record.

4. The Work Order may have an indicator of which floor the work order is on in the building (requires more design discussion to finalize).

5. Accuracy and Use Disclaimer: The data conversion of CAD to GIS shall be done without field surveying or auditing the CAD measurements against actual physical building measurements. ActiveG makes no guarantee of the accuracy or completeness of this information or data. ActiveG assumes no liability or responsibility in the use, or misuse, of this information or data. While every effort shall be made to assure the accuracy of this information, it should be understood that it does not have the force and effect of law, rule, or regulation. Should any difference or error occur, the law will take precedence. Please note the accuracy of GIS map data varies from location to location. The converted data should be utilized for general work order management and asset management purposes, not for engineering or other project planning purposes that depend upon a high degree of location accuracy.

6. ActiveG personnel will work remotely, primarily from the ActiveG offices in Mesa, AZ. However, at least one on-site meeting is recommended to kick off the project. Other on-site requirements are at the discretion of the city and will be billed at cost.

Task Breakdown

The following tasks outline the steps that need to be performed to accomplish the scope outlined above:

Task	Est. Hours	Notes
1. Project Design, Planning, and Management	40	
2. Create ESRI-based GIS map of Corpus Christi City Hall, using existing CAD drawings (DWG files) to be provided by the City.	92	Includes all floors of the building
3. ActiveG will train GIS personnel from the city in the process of creating and maintaining GIS data for facilities.	8	We recommend onsite training for this task. It can be accomplished via shorter web sessions, but onsite would be more effective and interactive.
4. Publish these new facilities maps using GIS map services, just as the ArcGIS map services used today to support other departments using Maximo/MapEngine.	5	We're assuming ActiveG is assisting in the process, with Larry's team taking the lead.
5. Build/update the necessary classification hierarchy for Facilities locations and assets in Maximo.	15	ActiveG assisting MIS resources with this.
6. Configure and run MEAdmin to create Facilities locations and assets in Maximo—the same process other city assets are added to Maximo today. Also incorporate these new assets into the nightly data load from GIS.	10	ActiveG assisting MIS/GIS resources in this process.
7. MapEngine Development (Iteration 1) and Configuration to implement the new functionality (outlined above).	110	Developing and configuring the functionality outlined above.
8. Testing – Round 1	10	
9. Development Iteration 2 (with feedback from users)	30	
10. Testing – Round 2	10	
11. Create documentation and deliver training	15	
12. Go Live Support	8	
Total Hours	**313**	

NOTE: The creation and maintenance of GIS data converted from CAD DWG files requires the use of ESRI ArcGIS Desktop Advanced version. Should the city want to create and maintain their own facilities data, ActiveG strongly recommends that the Facilities group purchase a license for this software. This tool helps automate the tracing and creation polygons (rooms, bathrooms, storage closets, etc.). Without this tool, the GIS designer must manually trace CAD shapes to create polygons.

FYI: Estimated cost of a single ArcGIS Desktop Advanced license: $10,500.

Cost

DWG-to-GIS Conversion	Development and implementation Service Hours for City Hall:	213 hours x $150/hr = $31,950
	Data capture/conversion	
	City Hall DWG-to-GIS Conversion	Max. 100 hours x $100/hr = $10,000
	Remaining 5 buildings of the Big 6 (Health Department, Frost Bank (5 floors), Police Department, Gas Department, Water Utilities)	**Max. 200 hours x $100/hr = $20,000
	Load/link remaining 5 buildings into Maximo location hierarchy	20 hours x $150/hr = $3,000
	Travel for 1 ActiveG employee on-site visit	$1,850
	Total cost (including optional items)	**$66,800**

**To receive the stated pricing on the optional tasks above, the city must commit to approving this work within 30 days after the completion of the City Hall conversion.

Note: Any additional required travel to customer site to be billed at cost.

Pricing expiration for both options: Sept 30, 2015