Eco GIS – Spatial Facility Management as ArcGIS online app

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SAN DIEGO, US
07.21.2015.
Background - EMAS

**EMAS** = Eco Management and Audit Scheme from EC.

**NEED FOR:**
Interactive and spatial building problem management tool for HfT.
Purpose and Motivation

ENVIRONMENTAL FACILITY MANAGEMENT

Paper Plans  Existing IT solutions – digital DBs, tables and charts  New approach - digital DBs with spatial quality
Requirement for the New Solution

- Data model for recording data in a unified way
- Accessible for multi-users
- Online solution as central platform
- Mobile solution
Workflow II

The Second Part

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<tr>
<th>INPUT DATA</th>
<th>TOOLS</th>
<th>OUTPUT</th>
<th>RESULT</th>
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<tbody>
<tr>
<td>Building floor plans and Issues feature classes uploaded in ArcGIS Online</td>
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<td>Webmaps per floor</td>
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RESULT

Building floor plans and Issues feature classes uploaded in ArcGIS Online

Functional webmaps that can be used with Collector app and in ArcGIS Online by web-browser

Can be used by end-user
Workflow III

The Third Part

**INPUT DATA**
- Webmaps per floor
- REST service URLs per each uploaded feature class

**TOOLS**
- Java DK
- ArcGIS Runtime
- SDK for Android
- Android Development tools
- Eclipse

**OUTPUT**
- ArcGIS app project
- Development guidelines and recommendations

**RESULT**
- Android app with certain functionalities. Foundation for future work

The Second Part

**OUTPUT**
- Webmaps per floor
- REST service URLs per each uploaded feature class

**RESULT**
- Functional webmaps that can be used with Collector app and in ArcGIS Online by web-browser

Can be used by end-user with limitations
The First Part: Data model

Building floor plan shapefiles

New *Issues* features class and their attributes
Building Floor Plans

Custom tools = Python + Model Builder

Two new tools to standardize and streamline preparation process.

Result: ~30 min for one floor
One point feature class as database for all building issues.

Fields, their properties.
Subtypes, linked domains.
Meaningful symbolization.
Data Model – Summary

2 new tools for processing floor shapefiles

New elaborated *Issues* feature class.

2 visual specifications and 3 workflows

4 sets of publishing requirements

Anete Fridrihsone 07.21.2015.
The Second Part:
Indoor Web-maps in ArcGIS Online

One web-map per each floor.

Each web-map have layers:
- *Issues* feature service
- Lines feature service
- Room feature service
- Floor tiled map
- HfT area tiled map

Each layer must have:
- different settings
Result of Part II

The Second Part

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RESULT
Functional webmaps that can be used with Collector app and in ArcGIS Online by web-browser

Can be used by end-user
Why Collector wasn’t enough..

Need for:
- Comfortable way to move between floors and buildings
- Auto-filled fields
- Customized functions
- Incorporated floor detection
- ..and more..
EMAS Mobile Application

By using ArcGIS Runtime SDK for Android a new application was developed
Login to EnSign App

anete
ecouser

Remember my username and password

LOG IN

Bitte wählen Gebäude!

BAU 1
BAU 2
BAU 3
BAU 4
HFT - STUTTGART

Developed by Anete Fridrihsone (anete.fridrihsone@gmail.com)
ASPEKT
Energie

THEMA
>No value>

FESTSTELLUNGEN
Elek. Geräte laufen unnötig oder sind im Stand bei Betrieb

PRIORITÄT
Hoch

URSACHE
Bau

RAUMNUMMER
Raumnummer

RAUMNUMMER
Raumnummer

BEMERKUNG
Bemerkung

DATUM
JUNE 11, 2015

Attachments
Issues:

Edited by Eco_Mapping_Dian a minute ago

Aspekt

Wasser/ Abwasser

Thema

Feststellungen

Entsorgung wasserschädigender Stoffe über Waschbecken (z.B. Farben und Lacke)

Prioritaet

Mittel

Ursache

Bau

Bau

Bau2_EG_Rooms: 100

Raumnummer

100

Raum

Stockwerk

EG

Bau

Bau 2

Bereich

402.15

Hoehe

4.00
ArcGIS products are sufficient for entire process.

The new EMAS app can be used for any property.

Indoor web-maps can be set up for any property quickly, in standardized manner.

EMAS process and environmental audits can be revolutionized.

Solution can be applied to many more indoor management issues.
Thank you!