# OpenGIS Project Document 17-065: Activity Plan for an OGC Interoperability Experiment

Title: OGC GeoPackage Related Tables Extension Interoperability Experiment (GPKG-RTE IE) Activity Plan

Abbreviation: **GPKG-RTE IE**

# Summary

This OGC interoperability experiment (GPKG-RTE IE) will test a proposed extension to the OGC GeoPackage Encoding Standard (12-128r14). Compusult has proposed a Related Tables extension that is designed to explicitly define the relationship between features in core GeoPackage feature tables and rows in attribute tables. One use case for this extension is the association of multimedia objects (including but not limited to videos, pictures, and PDF files) to geographic features. This extension has been demonstrated to support one-to-many relationships but many-to-many relationships should be explored as well.

The goal of this IE will be achieved by building GeoPackages containing embedded multimedia content and sharing those GeoPackages with other software products. This IE will produce an OGC Engineering Report that discusses whether the extension is fit for use and submission to the OGC for consideration as an OGC standard. This extension is intended to be transparent and to not interfere with software packages that support the GeoPackage Encoding Standard but not this extension. This experiment will verify that the extension is correctly designed to be transparent in this manner.

# INITIATOR ORGANIZATIONS

The OGC members who are initiators of this Interoperability Experiment are:

* Image Matters LLC (IM)
* Compusult
* Boundless Spatial, Inc.

Contact information for these organizations is at the end of this activity plan.

# Participant and observer ORGANIZATIONS

This IE will be open to the general public. Participants will be required to make a resource commitment. Non OGC organizations will be allowed in the IE as Observers only. OGC members who are not willing to make a resource commitment may also register as observers.

## Observer caveats

Official IE Observers will be granted access to the IE project on the OGC Portal. Observer status allows the member or non-member to monitor progress of the given IE, have access to the IE E-Mail reflector, access documents as they are posted to the IE folder on the portal, contribute software and/or data to the effort, and so forth. Observer status does not allow the Member or non-member to attend the IE Kickoff meeting, formally comment on documents, or otherwise disrupt the execution of the IE. Interoperability Engineering Reports from the IE will be made available to all OGC members at the end of the IE for review and comment. The Members may then elect to make the report publicly available.

The following organizations will participate in the GPKG-RTE IE.

* United States Special Operations Command (USSOCOM)
* TBD

The following organizations will observe the GPKG-RTE IE.

* TBD

# DESCRIPTION

## Objectives

The objectives of the GPKG-RTE IE include:

* Evaluate the proposed “related tables” extension to the GeoPackage Encoding Standard for fitness for exchange of multimedia content.
* Prepare an OGC engineering report that presents the results along with a plan for adopting the proposed extension.

## Background

## Compusult has identified a need for the ability to store information associated with features inside a GeoPackage. Examples of this information include the following:

* Photographs and pictures
* Videos
* PDF files

## In order to meet this need, Compusult has developed a proprietary GeoPackage extension. In the interest of interoperability, Compusult would like for this extension to be used throughout the GeoPackage community and is willing to submit it into the OGC standards process as either a full OGC Standard or an OGC Community Standard. A working draft of the specification for this extension can be found on GitHub at <https://github.com/jyutzler/geopackage-media/tree/master/spec>.

## Meanwhile, the GeoPackage SWG is interested in recommending for adoption the extension as an official GeoPackage extension, but only after it has been vetted as an appropriate approach and that there is commitment from the GeoPackage community to support it.

## Experiments

The GPKG-RTE IE will perform the following experiments:

* Experiment #1: produce GeoPackages containing media files in accordance with the proposed extension.
* Experiment #2: load the GeoPackages, extract the associated media files, and verify that they can be used as expected.
* Experiment #3: load the extended/non-extended GeoPackages in GPKG compliant software that does not support the extension to verify that the software behaves as expected using both versions.

# TECHNICAL APPROACH

The Technical Approach for this Interoperability Experiment is to perform three experiments.

Test data is TBD.

## Experiment #1

The methodology involves:

* Production of GeoPackages using test data that is provided either by the IE or by the participants themselves
* Visual inspection of the GeoPackage database in an SQLite viewer to determine whether the GPKG looks as expected
* Use of an executable test suite to evaluate compliance

## Experiment #2

The methodology involves:

* Loading GeoPackages containing the proposed extension into software systems;
* Using the software to extract the associated media files and confirming that they can be used as anticipated.

## Experiment #3

The methodology involves:

* Consumption of GeoPackages that implement this extension by clients that are not aware of this extension.
* Verification that non-supporting clients do not lose functionality when using a version of an extended GeoPackage compared to when they use a non-extended GeoPackage.

# DELIVERABLES

The documentation listed below will be considered the deliverables for the project.

## Documentation

* The results of the three experiments will be documented. The results of the experiments will not identify specific participants (will be anonymous). All project documentation will be posted to the OGC Portal. The OGC Wiki will be used as needed.

## Demonstration

* The developed documents will be made available on the OGC portal.
* A live demonstration of the GeoPackages and client software will be shown at an appropriate OGC TC meeting.

# SCHEDULE (Tentative)

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| **Startup**  OGC Review Board approval of Activity Plan: Jul. 2017  Press Release / Call for Participants: Aug. 2017 |
| **Execution**  Planned kickoff date (execution start date): September 25, 2017  GPKG-RTE IE Execution: Oct. 2017–Jan. 2018  Planned end date: Jan. 2018 |
| **Wrap-up and Reporting**  Demonstration at OGC TC Orleans: Mar. 2018  Final document submission: Apr. 2018 |

# RESOURCE PLAN

The Initiative Manager will be Jeff Yutzler (IM) and the Initiative Technical Lead will be Rob Cass (Compusult).

The following resources will be available.

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| *Web Resources* | OGC will provide a project workspace on the OGC Portal. |
| *Staffing* | Each initiating and participating organization will provide adequate staff resources to support their defined responsibilities for the duration of the GPKG-RTE IE. |
| *Hardware* | Participants will provide hardware as needed to support the GPKG-RTE IE. |
| *Software* | Participants will provide software as needed to support the GPKG-RTE IE. |
| *Other Resources* | Participants in the GPKG-RTE IE are self-funded. All expenses incurred in carrying out the GPKG-RTE IE will be assumed by the participating agencies within their regular line-of-business. |

# INITIATOR ORGANIZATIONS – Contact Information

| ***Organization Name*** | **Image Matters LLC** | |
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| ***Organization Name*** | **Compusult** | |
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# Participant ORGANIZATIONS - Contact Information

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