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Publish and Share Testing and Training Report

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Abstract:

This is a report on the testing and training of the Publish and Share (Pas) Platform carried out by Staff from Esri Rwanda in collaboration with Hansa Luftbild from October to December 2019.

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This report does not constitute a deliverable to be submitted according to the its4land grant agreement. It was solely written to document the testing and training work carried out, as help and resource for developers who may be using the PaS in the future.

The report reflects only the authors' experiences and views. The EU-Commission is not responsible for any use that may be made of the information it contains.

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The its4land consortium consists of the following partners:

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KU Leuven (KUL)
Westfaelische Wilhelms-Universitaet Muenster (WWU)
Hansa Luftbild AG (HL)
Institut d'Enseignement Superieur de Ruhengeri (INES)
Bahir Dar University (BDU)
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1 Introduction

The Publish and Share Platform (PaS) developed in WP6 and the integrated its4land tools from WP3, WP4 and WP5 are - amongst other aspects - designed to be used by developers using various development environments and resources.

The Testing and Training organized and conducted by Esri together with Hansa Luftbild from October to December 2019, served the to

- Test whether PaS conforms to the documentation
- Test the functionality, characteristics and qualities of PaS in a "realistic testing scenario".
- Test data downloaded from the PaS in other software or environments, than the platform itself.
- Collaborate with, transfer knowledge to and train developers from Rwanda in using the platform (the way developers will use it in the future)

The "realistic testing scenario" was further developed and served as a guideline for the Video "Rwanda Use Case" produced by the its4land consortium separately (the video however does not show the actual testing itself).

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2 Testing Purpose, Approach and Procedure

2.1 Purpose

The general idea for the testing scenario came from the idea, a platform for developers and the data it manages and contains must be tested in another environment than its own, because it is in

- "non-familiar" environments (such as ArcGIS, since the platform itself is an open source development),
- used independently by staff other than the core-developers themselves,

possible issues with the platform or software in general are most likely to manifest themselves.

To guide the testing team, a scenario likely to be encountered by implementer using the platform as a basis for developing Land Administration Systems was specified. We called it the "Realistic Testing Scenario", which later also became the guiding principle of the "Rwanda Use Case" video created separately by the its4land consortium.

2.2 "Realistic Testing Scenario"

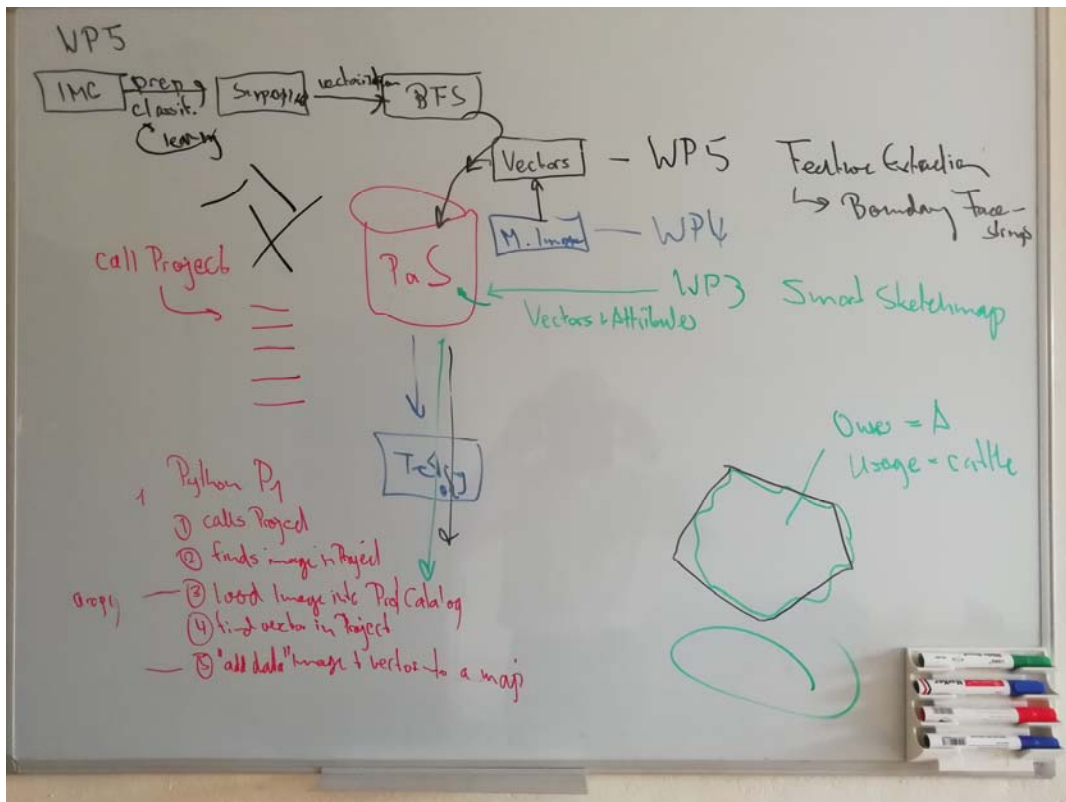


Figure 1: Developing the realistic testing scenario

The realistic testing scenario to be applied, was finalized, after a few preliminary emails and telcos, by Kaspar Kundert with the Esri Rwanda testing team during a meeting on 18 October 2019 in Kigali, Rwanda. The testing team of Esri Rwanda consisted of was led by Jules Maurice Karasira, who worked with David Iradukunda and Alain Roland Munyaneza.

2.3 Scope

This testing involved checking whether its4land/PaS platform conforms to various characteristics or exhibits various qualities that are expected according to the capability description of the platform.

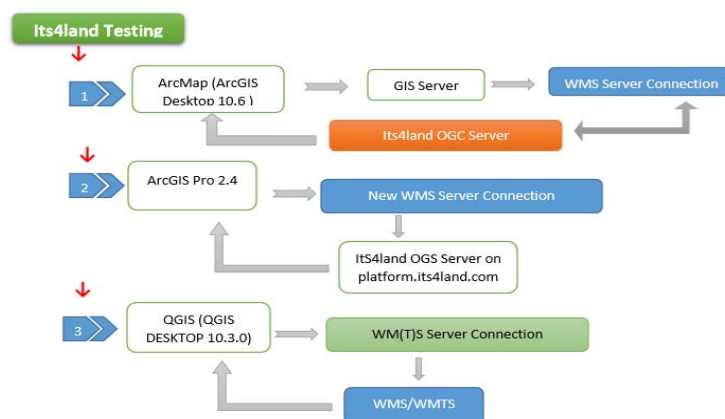
The testing was more focused on tools that focused on the functional externals to assure that defined input of Its4land/PaS produces actual results that agree with required results documented in the specifications. The other side of testing was more focused API testing that focused a bit on the independent logical internals of the software.

According to the description, its4land/PaS is a universal platform that will be used by different people with different resources and platforms. By narrowing this down, the purpose of this testing was to check if the platform's resources are accessible and usable through ESRI different platforms.

During the testing process, Different platforms were used, such as ArcMap and ArcGIS Pro. Not only the test was done on its4land/PaS through ESRI platforms, the test was also done on open sources such as QGIS; in order to check and compare results through the different platforms.

2.4 Testing Procedures / Steps

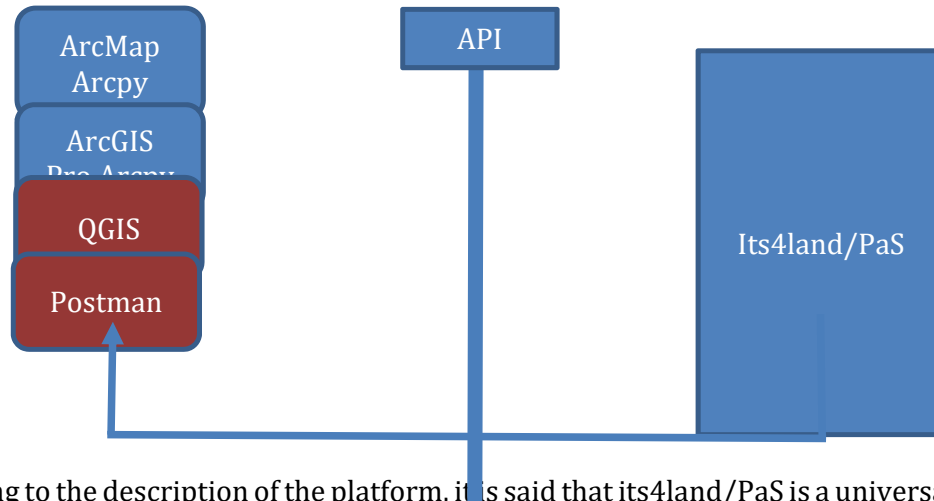
2.4.1 Step 1: Access the its4land/PaS platform's resources



2.4.2 Step 2: Usability of accessed resources

During the testing, the its4 land/PaS platform had various projects being done, but much focus was on Rwanda study case (“Ruhengeri”) to check all available resources from the project.

2.4.3 Step 3: API request tests through ArcMap, ArcGIS Pro and Postman.



According to the description of the platform, it is said that its4land/PaS is a universal platform that allows operating, integrating and disseminating land administration workflows and functionalities with focus on base data capturing.

The platform itself is equipped with three main tools such as;

- Boundary Delineator: Tool for interactive delineation of visible boundaries from remote sensing imagery;
- UAV Ortho Generator: Tool for creating orthomosaics from photos captured by areal vehicles (UAVs);
- And SmartSkeMa: Tool for land tenure documentation using hand drawn sketch maps.
-

By accessing the its4land/PaS platform, we are expecting to access available resources and be able to display those resources using ESRI platforms.

However, in order to proceed with testing, we tried a couple tests from outside ESRI platforms to check the access and availability of resources from its4land/PaS platform.

In order to do the above; we used Postman as one of the universal software API testing platforms.

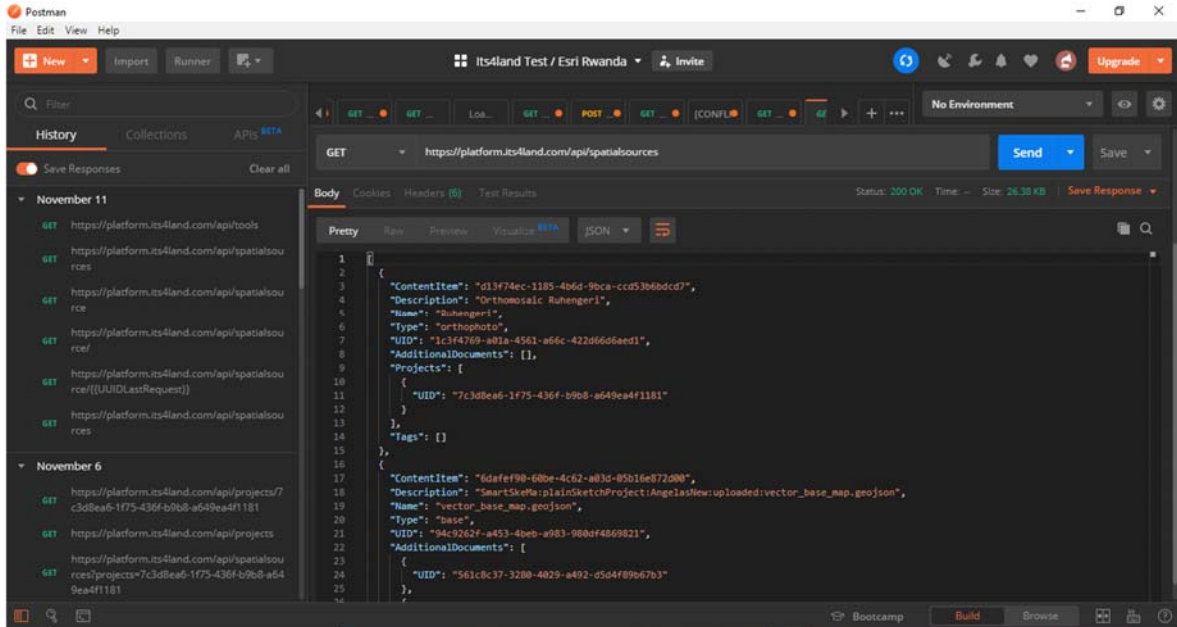


Figure 2: its4land/Pas API testing using Postman

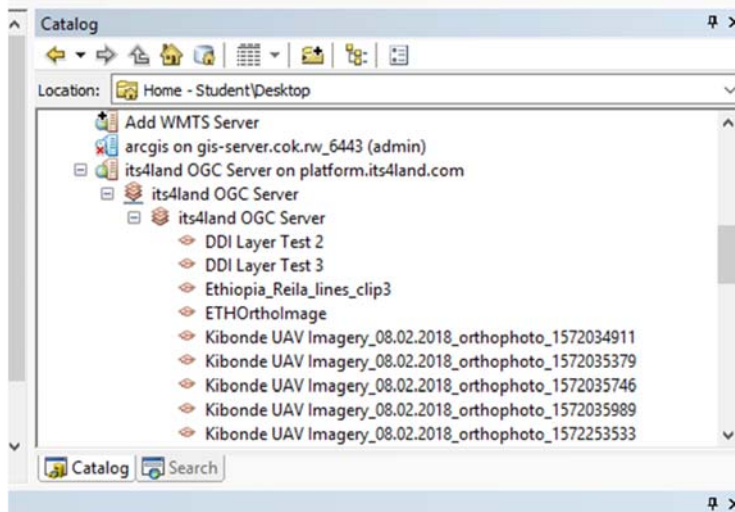
Successfully, the testing platform showed that the its4land/PaS is live and accessible through Postman. Moreover, the testing showed that there are some available resources to conduct the testing. The next step was to access the above found resources from different GIS platforms.

3 Testing Results and Analysis

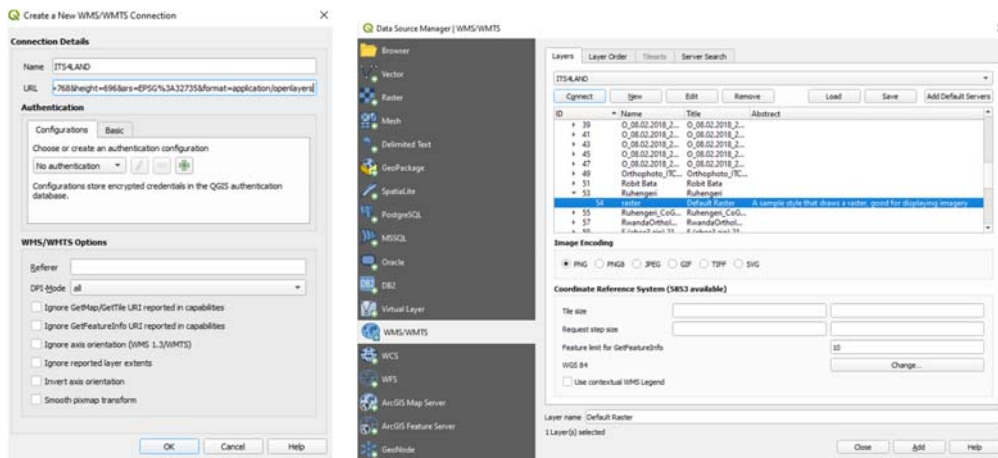
3.1 Access the its4land/PaS platform's resources

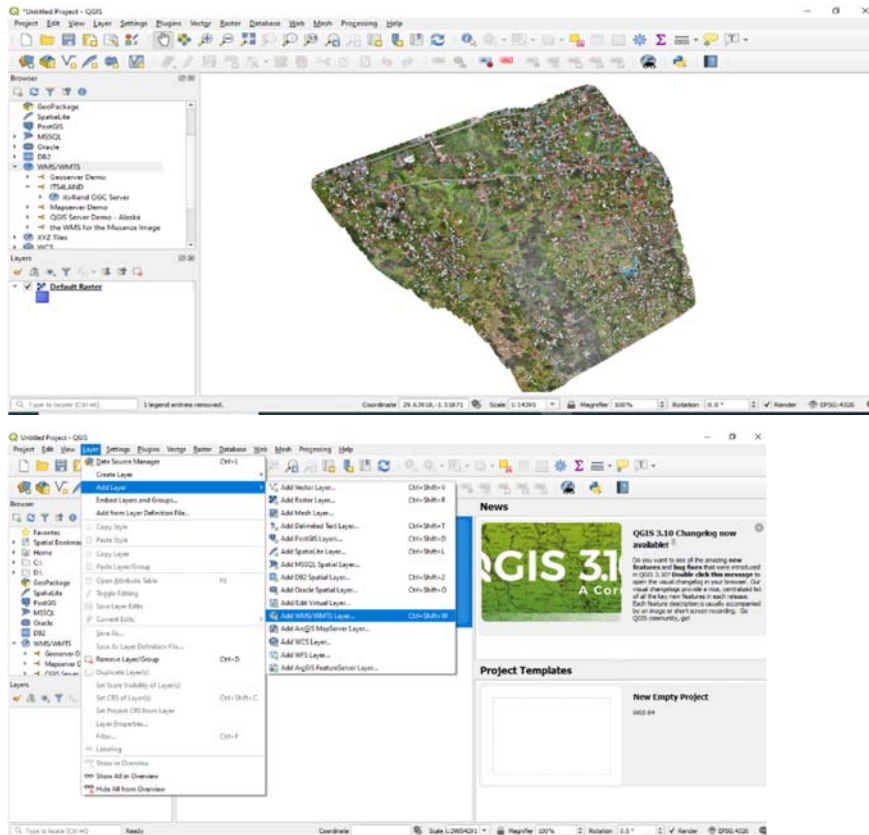
As mentioned earlier, this test was done on different ESRI platforms and other open sources such as Postman and QGIS. Using either ArcMap or ArcGIS pro, the first part of the testing was connecting to the server where the its4land/PaS platform resources are located.

ArcMap



QGIS





The connection was successfully made from ESRI platforms and QGIS; the next part of the testing was being able to access and use resources found on the server.

3.2 Usability of accessed resources

After successfully access the its4land/PaS server from ESRI platforms, we were able get access to different resources available on the platform. By the time of testing, only images of different projects were present.

3.3 Summary and Conclusions

Using tools of ESRI's platforms, available resources from its4land platform are successfully accessible. By connecting to "*its4land OGC server*", we were able to access and load its4land resources to ESRI platforms.

However, by the time of testing process the only resources that were available were images on Rwanda case project "Ruhengeri". We could not see any available resources apart from "Ruhengeri" image such as delineated parcels or any delineated boundaries using some of the its4land tools such as "*SmartSkeMa*".

3.4 Short Recommendations

As a recommendation for further developing the its4land/platform, it would be nice to download resources directly from the platform as shapefiles rather than downloading it in GeoJSON format and converting it using third party tools.

4 End User Training

The developers in were testing PaS and were at the same time they profited from a solid knowledge transfer from the core developers of PaS of Hansa Luftbild, notably Christian Timm and Dr. Mohammed Imaduddin Humayun.

While most of the training/coaching was done via telefon conferences and through an active exchange of emails. Dr. Humayun's participation in the AfricaGIS Conference in Kigali provided the opportunity for an in-person exchange to deepen the local knowledge and to exchange experiences gained so far.

Dr. Humayun's conference-long presence in Kigali opened this exchange and training sessions to all participant of AfricaGIS, regardless whether they had used PaS before or not. Together with the several tool-trainings the leaders of the respective WPs conducted earlier in the project, this Platform Testing and Training completed and concluded the "End-User¹ Training" as specified in the Grant Agreement to be done by Hansa Luftbild in project month 22.

¹ Please see deliverable D8.1 (Business Plan) for a discussion of the term "End-User". D8.1 states, that the "End User" of a platform like PaS, cannot be put on one level with an "End User" of a Desktop GIS.
The end-user of a platform like PaS is a developer, typically working for a system integrator or an engineering company implementing development assistance projects.