D 1.5 NIVA virtual project meeting #4

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INTRODUCTION

The “NIVA virtual project meeting #4. From Development to Testing” was held on 23-25 November 2020.

Due to the COVID 19 Pandemic and the resulting lockdowns, it was not possible to host a physical meeting, hence this was replaced by a virtual meeting through MS Teams.

The objectives were:

- To develop workplans and action lists to move from the phase of development of components and innovations to testing them
- To update all project participants and EC representatives on the relevant activities in NIVA shifting from the phase of development to the phase of testing
- To provide an opportunity for all project participants to discuss and shape the next steps of the project implementations.

The detailed programme of the NIVA virtual project meeting is in Annex 1. References to the presentations and the documentation produced are given in Annex 2 with links directing to the NIVA SharePoint.

A SUMMARY

As a summary of the 3-day virtual meeting:

In day 1 (23 November), in the morning session, a number of overviews were given on:

- ✓ the overall project achievements, subcontracting of software components (by WP1)
- ✓ Stakeholder involvement (by WP5): what has been achieved and Sustainability plan
- ✓ The Common Components and GitLab (by WP4)
- ✓ Pilot progress, testing plan and next steps (by WP2)
- ✓ Progress of interoperability recommendations, towards uptake (by WP3).

The afternoon session was dedicated to large scale pilots & testing with a first group of UCs presenting on:

- ✓ What components are the UCs and WP4 offering?
- ✓ Which of them will be tested and when?
- ✓ What are issues in moving them from one country to another country?
- ✓ Awareness of the testing PAs as a priority.

On day 2 (24 November) the morning session was dedicated again to Pilots & large scale testing continuing the discussions held in Day 1, with the remaining UCs presenting.

In the afternoon two parallel working sessions in the form of an interactive workshop and a deep-dive sessions were held, followed by reporting back to the plenary session:

- ✓ Life beyond NIVA, including stakeholder engagement
- ✓ Open EO & WP4 infrastructures, incl. CEF components

On day 3 (25 November) the morning session was again dedicated to two parallel sessions on developments around:

- ✓ Data sharing within the context of IACS
- ✓ Added value of NIVA: Innovations in NIVA across the board & Adopting NIVA innovations in PAs.

This was followed by reporting back to the plenary session.

The afternoon included a session on “Insights from NIVA” which consisted of:

- ✓ As Is-Analysis of IACS systems
- ✓ NIVA Performance Management in KPIs
- ✓ Planning of the NIVA reporting.

Followed by the final closing session on reflections and suggestions.

Report back/minutes for each sessions are given in Annex 3.

ANNEX 1. Programme

Monday 23 November 2020

	Link to virtual room	Topic	Set-up	Keywords, why should people join this?
9.00-10.00		Test session for Teams, problems solving		
10:00-11.00		NIVA General progress (Sander Janssen (WR)) WP5 Innovation Ecosystem progress (Folkwin Poelman, RVO) WP4 Knowledge Information System (Matteo Rastelli, AGEA)	15minutes, 5 min Q&A 15 minutes, 5 min Q&A 15 min, 5 min Q &A	Overview of the project achievements, subcontracting of software components Overview of Stakeholder involvement: what has been achieved? Sustainability plan? Common Components, GitLab
Break				
11:15-12:10		WP 2 Large scale pilot progress, overview (Mariano Navarro TRAGSA) WP3 Harmonization and Interoperability progress (Dominique Laurent, IGN)	15 minutes, 5 min Q&A 15 minutes, 5 min Q&A	Pilot progress, testing plan and next steps, Progress of interoperability recommendations, towards uptake

Afternoon Session: Pilots & testing Towards large scale testing and testing: • What components are the UCs and WP4 offering? • Which of them will be tested and when? • What are issues in moving them from one country to another country? • Awareness of the testing PAs as a priority Leads: Mariano Navarro, Jesus Estrada, Jesper Stendal, Matteo Rastelli Minutes by:				
14.00-15.00	UC2 LT (SP) UC5a DK (FR, SP) UC1c EE (IT)	Short presentation from UC leaders and testing countries. How testing phase is understood by testing countries	15 minutes 5 min Q&A 15 minutes 5 min Q&A 15 minutes 5 min Q&A	moderator: Jesper Stendal
Break				
15.15-16.15	UC3 SP - (SP) CAPDER DM (EE) SWC (NL) UC4b NL (DK, SP, GR)	Short presentation from UC leaders and testing countries. How testing phase is understood by testing countries	25 minutes 5 min Q&A 25 minutes 5 min Q&A	moderator: Jesper Stendal

Tuesday 24 November 2020

Morning Session: Pilots & testing (continued) Towards large scale testing and testing: • What components are the UCs and WP4 offering? • Which of them will be tested and when? • What are issues in moving them from one country to another country? • Awareness of the testing PAs as a priority Leads: Mariano Navarro, Jesus Estrada, Jesper Stendal, Matteo Rastelli Minutes: Mariano, Jesus				
10.00-11.00	UC1a GR (IE, FR, EE, IT) UC4a IR (LT, EE, IT, GR)	Short presentation from UC leaders and testing countries. How testing phase is understood by testing countries	25 minutes 5 min Q&A 25 minutes 5 min Q&A	moderator: Jesper Stendal
Break				
11.15-12.15	UC1b FR (NL, DK, SP) UC5b	Short presentation from UC leaders and testing countries. How testing phase is	25 minutes 5 min Q&A	

	IT (EU)	understood by testing countries Special slot for testing strategies for UC5b	25 minutes 5 min Q&A	moderator: Jesper Stendal

Afternoon session: Parallel working session				
	Link to virtual room	Topic	Set-up	Topics
14.00-15.30		Life beyond NIVA, incl. stakeholder engagement (Tamme van der Wal, Folkwin Poelman, Jaclyn Bolt)	Workshop/ discussion session	Reflection on the plan towards an future of NIVA Interactive session
14.00-15.30		Open EO & WP4 infrastructures, incl. CEF components, (Cecilia Sciarretta, Marco Corsi, Matteo Rastelli)	Deep dive session	
Break				
15.40-16.10		Plenary Report back from break out groups	5 minutes presentation per room & 15 min Q&A	Moderated by Sander Janssen

Wednesday 25 November 2020

Morning Sessions in parallel: Developments around				
	Link to virtual room	Topic	Set-up	Topics
10.00-11.30		Data sharing within the context of IACS	Interactive session	Moderator: Dominique Laurent
10.00-11.30		Added value of NIVA: Innovations in NIVA across the board & Adopting NIVA innovations in PAs		Based on previous discussions in the PA adoption group moderator: Tomaso Ceccarelli
Break				
11.40-12.00		Plenary Report back from break out groups	5 minutes presentation	Moderated by Sander Janssen

			per room & 15 min Q&A	

Afternoon session: Insights from NIVA and closing session				
	Link to virtual room	Topic	Set-up	Topics
14.00-15.00		As Is-Analysis of IACS systems (Jesper Stendal) NIVA Perfomance Management in KPI's (Folkwin Poelman, Tomaso Ceccarelli, Rob Lokers) Planning of the NIVA reporting (Rob Lokers)	Presentation of 15 minutes, 5 minutes questions Presentation of 15 minutes, 5 minutes questions 10minutes	
Break				
15.15-16.00		Closing session with reflections and suggestions	Moderated by Sander Janssen	Collecting open questions, next steps, etc

Further in December

To be Scheduled	Topic	Set-up	Detailed description
Beginning of December	Virtual Policy Board meeting	1.5hours virtual meeting	Policy Board members
	Virtual Stakeholder Forum: 3 December: FAST and FMIS/field book 10 December: Green Deal and carbon farming 17 December: Capigi and digital rights	2 Hour webinar	All NIVA stakeholders (maybe especially PA's)
	Developments in other relevant innovation projects: 1. OPenIACS 2. Sen4CAP 3. MEF4CAP 4. DIONE 5. OpenEO 6. DEMETER 7. Atlas 8. ENVISION	2 hour webinar	
	General Assembly		

ANNEX 2. Presentations and Documentation

Monday 23 November 2020

	Topic	Presentations	Mentimeters, videos	Report back/minutes	Attendance list
10:00-11.00	NIVA General progress (Sander Janssen (WR)) WP5 Innovation Ecosystem progress (Folkwin Poelman, RVO) WP4 Knowledge Information System (Matteo Rastelli, AGEA)	Presentation Sander WP5 ppt WP4 ppt Task4.2 ppt	MorningVideo	Morning session	Attendance morning
11:15-12:10	WP 2 Large scale pilot progress, overview (Mariano Navarro TRAGSA) WP3 Harmonization and Interoperability progress (Dominique Laurent, IGN)	WP2 ppt WP3 ppt	morningafterco ffeebreak	WP2 session report	

14.00-15.00	Short presentation from UC leaders and testing countries. How testing phase is understood by testing countries	UC1c UC2 UC3	AfternoonVide o	General minutes UC2,5a,1c_report	Attendance afternoon
15.15-16.15	Short presentation from UC leaders and testing countries. How testing phase is understood by testing countries	UC4b UC5a		UC3_4b_report	

Tuesday 24 November 2020

Morning Session: Pilots & testing (continued) Towards large scale testing and testing.					
	Topic	Presentations	Mentimeters, videos	Report back/minutes	Attendance list
10.00-11.00	UC1a GR (IE, FR, EE, IT) UC4a IR (LT, EE, IT, GR)	UC1a ppt Uc4a ppt	Demovideo Morning session video	UC1a, UC4a report	Attendance list
11.15-12.15	UC1b FR (NL, DK, SP) UC5b IT (EU)	UC1b ppt UC5b ppt		UC1b,UC5b report	

Afternoon session: Parallel working session					
	Topic	Presentations	Mentimeters, videos	Report back/minutes	Attendance list
14.00-15.30	Life beyond NIVA, incl. stakeholder engagement (Tamme van der Wal, Folkwin Poelman, Jaclyn Bolt)	20201124. Workshop intro		Session_report_back Life after NIVA	
14.00-15.30	Open EO & WP4 infrastructures, incl. CEF components, (Cecilia Sciarretta, Marco Corsi, Matteo Rastelli)	Task_4.2_CommonAPI_Workshop_24112020	openEO-NIVA	Session_report_OpenEO	meetingAttendanceList
15.40-16.10	Plenary Report back from break out groups				

Wednesday 25 November 2020

Morning Sessions in parallel: Developments around					
	Topic	Presentations	Mentimeters, Videos	Report back/minutes	Attendance list
10.00-11.30	Data sharing within the context of IACS	IACS data sharing-WP3 Data sharing DG AGRI IACS data sharing - catalonia	Video Data sharing_session	Data sharing session report	meetingAttendanceList
10.00-11.30	Added value of NIVA: Innovations in NIVA across the board & Adopting NIVA innovations in PA's	Presentation adoption session-v1	3-main-obstacles-to-implementation-of-digital-innovations-in-iacs mentimeter NIVA_innovation_session	Session_report_back_Innovation and adoption	
11.40-12.00	Plenary Report back from break out groups				

Afternoon session: Insights from NIVA and closing session					
	Topic	Presentations	Mentimeters, videos	Report back/minutes	Attendance list
14.00-15.00	As Is-Analysis of IACS systems (Jesper Stendal)	NIVA_iacs_as-is november_2020 presentation	MentiMeter_ASisResults		meetingAttendanceList (1)

	NIVA Perfomance Management in KPI's (Folkwin Poelman, Tomaso Ceccarelli, Rob Lokers) Planning of the NIVA reporting (Rob Lokers)	Presentation performance monitoring-v1	1-what-should-be-the-next-steps-of-the-niva-iacs-as-is-analysis-prioritize mentimeter Performance management		
15.15-16.00	Closing session with reflections and suggestions	NIVA_Janssen_WP6_closingIssues_v1	ClosingSession MentiMeter_ClosingSession 1-what-should-be-the-next-steps-of-the-niva-iacs-as-is-analysis-prioritize 2-did-we-succeed-in-our-goals-for-this-meeting		

ANNEX 3. Meeting reports

Session Title: Morning session

Session organizers: WP1
Rapporteur: Tamme, Sander

Aim of the session:
Progress in General and for 3 WPs

Main topics covered: NIVA General progress, WP5 Innovation Ecosystem progress, WP4 Knowledge Information System

Sander Janssen (WR, NIVA coordinator) - 'State of NIVA'

Over 100 people registered. The meeting is recorded.

This moment in the project, we are at the pivoting point to go from development to testing. But how to test, what to test, who will test? This is what we want to find out.

Overview of main results are presented, and invitation to discuss on Wednesday the table of main innovations coming from the project.

Not all relevant stakeholders are connected yet. We need more focus on that. PAs and technical partners are well connected, but we lack interactions with knowledge development and civil society groups.

Folkwin Poelman (RVO, NIVA WP5 lead) - 'Innovation Ecosystem progress'

Do you know the joke of this group of people that go to Dublin … ? Well, they didn't go.

Stakeholder exchange platform report is submitted. NIVA website is under continuous improvements and we want it to grow into a platform where all information (incl. news) on the project can be found. The revised and updated workplan is available to shift to digital and online communication. Newsletter is about to be published.

Upcoming webinars for the stakeholder platform: 3/12 on FAST and Fieldbook, 10/12 on green deal and carbon farming and 17/10 on Farm Data Sharing and digital rights.

8 practice abstracts have been published, and another round of practice abstracts are expected by end of the project.

WP5 also prepared templates to harmonise the publications.

For next steps WP5 works on the innovation ecosystem and how we can continue our collaboration after the NIVA project finishes. Invitation to join our workshop on Tuesday afternoon. All need to pre-register on miro.com, to be able to participate in the interactive boards.

The newsletter, the CAPIGI contact list, and all can share the meeting invites to a wider audience.

Is there an open discussion on the project extension after may 2022: there might be possibility to extend the project. But that will be later discussed.

Eric Chesnia offered to be involved in preparing the 17/12 meeting and also organise a more cross-wp discussion on farm data sharing.

Matteo Rastelli (AGEA, NIVA WP4 lead) - 'knowledge information system'

Gitlab is used to share code. Most of the code is now only visible within the project. But at some stage it will be further opened. Question: How 'open' do we want to be?

Besides codes, also documentation and use/development guidance is needed. Jane provided this as the first, and Matteo congratulates her on the completeness and clarity of it. It sets the standard for the others!

Common data components: to help use cases on dealing with particular requirements, organised as a services to UCs. We can ask EGeos to support, and then they will provide that. This works for instance very good in the collaboration with SEN4CAP. So if any UC needs assistance, this can be provided. More details will be presented tomorrow.

Technology watchdog: what is going on outside? Irene is enjoying the task and asks for feedbacks. So it is intended for ourselves and to share amongst the project participants. Please help Irene to make the most of it.

Nikos OPEKEPE: works on UC1a: regarding 4.2: different UC develop their own user management component? What is the situation? Weren't we supposed to have a centralised component for that?

Mariano: CEF components are available for that. Maybe task 4.2 can organise the takeup of these components? But are we as NIVA supposed to manage (and maintain) that?

Cecilia: agreed with Mariano.

Kostas OPEKEPE: it is too late already, we should have done this before.

Sander: Tomorrow we are discussing this in more detail. We can also discuss then when WP4 common components.

Mariano Navarro (TRAGSA, WP2 lead) - 'Large Scale Pilot, overview and progress'

Already 34 components in Gitlab. Several deliverables are available or are about to be available, but apparently there are still missing contributions from partners. It is difficult to get contributions from use cases completed.

The reference architecture is under development and will be finished by May 2021. There is a single page IACS reference architecture now, and all UCs can be fitted on them. Wonderful scheme!

Marc: how about the common components: EO broker, data integrity assurance? The EO broker is discussed tomorrow.

Jesus: testing schedule needs some updating.

We also need to define how to test the components coming from WP6 subcontracting.

Data strategy: there is a data sharing group that is focussing mainly on INSPIRE. In NIVA and OpenIACS there are other opportunities for linked open data, e.g. UC1b and others use that. And we expect to create Open Data Components for those kind of data sets. Mohamed: yes IACS Data Sharing is indeed looking at/following INSPIRE, to also provide IACS data as open data and reinforcing the role of the data.

Nikos: how are we going to test the integration of different components? Mariano: this is still unclear. We have asked UCs to provide how testing countries are going to test and how components are linked to existing IACS or to each other.

Sander: we may need to organise a review of the reference architecture and component matching.

Kostas OPEKEPE: we have been asking for components to bridge between components. But it seems to be not solved. We need a link between 1A and 4A for instance. And we need a user manager component. Testing will not be feasible without. Mariano: you are right. We should get clear answers. I encourage you to look at bi-lateral testing. We need to integrate the testing and we have to get an overview on how the components work together. We are now at the point where we need to answer these questions.

More details will be discussed tomorrow.

Dominique Laurent (IGN, NIVA WP3 lead) - Harmonisation and Interoperability progress

Second version of glossary is delivered in October.

Recommendations for standardisation: this will be included in D3.4

Interoperability trials: WP3 made a template, for potential input.

There is also a template for Multi MS testing: is it easy to be used? Is it really interoperable? Is it really relevant and does it performs?

Legal interoperability: looking at opening IACS data for other domains.

Data model for EO monitoring is for wider interest.

KPI: from project plan.

Mohamed: are you talking about non-personal data? Privacy is an issue, and will be taken care of in the recommendation, but it is not restricted to that.

DG AGRI is interested in the results of the survey among PA, especially in understanding the reasons why PA don't publish non-personal data.

Jesper Stendahl (DAA – WP2 Co-lead) - introduction to sessions on UCs

3 UCs, 20 minutes each for presentation and Q&A.

Tomas Orlickas (NPA) UC2 – Prefilled Application

UC2 is organised by NPA, with sinergise and iTree. And FEGA is testing. UC2 prefilled application is using output of other UCs but in order not to wait for their results, UC2 also harvests data from other sources.

There are 3 components:

- Preliminary boundary delineation
- Crop type integration model
- Tool for robotised harvesting (e.g. certification)

The preliminary boundary delineation is quite good, although improvements can be made. Interesting results, with different applications.

SEN4CAP usage for crop types: works OK for winter crops. Question is what the scale of the application is.

For the robotic data harvesting a tool was selected and it was evaluated by reprocessing a known case. Good expectations. But issue is how to make it generalised.

Mette Nielsen (DAA) UC5a -

Focussing on ponds at first. THere was a lot of training data available. Worked good.

For row of trees: precision needs to be improved. For all: The algorithms do a good detection, but lack the precision needed yet. So alerts (markers) go fine, automatic update is still not satisfying.

The tests consists of 5% detection on random checks. Tests take place November February.

Guillaume Marchand (IGN) and Emmanuel de Laroche - French algorithms

Updating LPIS. Deep learning is applied to orthophotos and 3D models to detect building and vegetation and make a mask out of it. This is then included in a threshold component to create vectors that will help in identifying changes in agricultural parcels (LPIS parcels).

Session Title: WP 2 Large scale pilot progress, overview

Session organizers: Mariano Navarro (TRAGSA)
Rapporteur: Jesús Estrada (TRAGSATEC)

Aim of the session:
General overview of WP2 status and deliverables. Highlight the dependencies and connections between the UCs

Main topics covered:
The presentation, by Mariano Navarro and using this file, presents the general status of WP2 situation, regarding both UCs – components and Deliverables. Also, there is a kind reminder of pending contributions for the documents.
There is a specific slide for the NIVA Architecture and how the UC's components (currently, 34) fill in the general design. Also, there are general instructions for the UCs testing phase that should be active right now in all the UCs.
Majority of components are data processes that, pointed out by Mariano, could be more difficult to test.
Regarding deliverables, D2.3 has already received the Maturity Map by DK. D2.4 is almost empty but the ToC.
Marc (RVO) asks:
"In Copenhagen we defined common components. What is the progress on these? Based on Brokers. " Matteo (WP4) answers that they are already defined in the Architecture.
El Aydam Mohammed (DG Agri) asks:
what is the current data sharing strategy and what do you mean by a stronger strategy?
Mariano answers that it is based on projects as Open IACS and Linked Open Data.
This answer seems no to be completely satisfactory because El Aydam points out that OD is a legal obligation and LOD is a method not an strategy.
Fabio (ABACO) comments:
Please notice that, beyond APIs and UIs, "Processes" exist since they also serve as explanation of something "new" that may require EU or National regulation amendments. The UCs do not necessarily need to speak to each other directly. Always remember that the legacy IACS is there to stay and remains the backbone of communication. So, UCs communicate to each other "through the IACS".
To this, El Aydam Mohammed (DG Agri) comments that this is the idea of NIVA Project, a new Vision.
Nikos (Neuropublic) asks: "how we are going to test?"
Mariano answers that this is a open question that will be defined through the testing phase.
Kostas (OPEKEPE): UC1a needs connection to UC4a and User management tool (CEF). Component. When will be it available?
Mariano answers that it will be defined during the testing phase.

Decisions reached

- No decisions

Follow up actions

Who?	What?	Finished by?
Tragsatec	Send final version of D2.3	End of November
Agea	Send final version of D2.4	End of the year
All UCs leader (but UC1c, 3 and 4b)	Send contributions on testing to fill D2.5	End of the year

Tragsatec	Send D2.5	End of the year / January

Session Title: WP2 Use Cases UC2, UC5a, UC1c

Session organizers: Jesper Stendal UCs leaders UC2, UC5a, UC1c
Rapporteur: Jesus Estrada

Aim of the session:
Presentation of the current status of UCs. Emphasis on Testing phase and second MS testing phase.

Main topics covered:
Presentation of the session by Jesper. Overview and Main purpose. Towards large scale testing we try to answer:

- What components are the UCs and WP4 offering?
- Which of them will be tested and when?
- What are issues in moving them from one country to another country?
- Awareness of the testing PAs as a priority

UC2 presented by Tomas Orlickas (NPA) using this file.
UC is developed by Sinergise, NPA, iTree and tested by FEGA.
Dominique (IGN) asks:
"Have investigated if similar external registers in other European countries?"

Mariano (TRAGSA) asks:
I saw additional UC2 component for SEN4CAP Link. Is it discussed with UC1a, UC1b also or with WP4?

Guillaume (ASP) asks:
"Do you have an error rate calculated on a tested area?"
Martynas answers that this will be calculated during by FEGA-Spain testing and supported by Sinergise
Mariano (TRAGSA) asks:
"Do you expect to provide later, perhaps in second half of the project, an API based component description and current SW evolved?"
Martynas answers that Robot component will be tested by Ireland, instead of Spain, due to lack of resources.

UC5a
Mette and Jesper (DAA) present using this file and used this survey https://www.menti.com/zx8xc9e9vm
This UC is working on training algorithms but has detected some problems with ponds. They are using a sample of 3000 registers. It could have issues on differences on land type
Marc (RVO) asks:
"can RPA be implemented as a generic tool? implemented in different countries. I am curious on what product you will deliver"
"can you elaborate on the resolution of the source data and the influence it has to the end result?"
"Do you detect changes on objects or detect new objects?"
Answer by Guillaume (ASP): it is solved using orthophotos and up to date upgraded datasets.
Emmanuel comments that the tool is interesting for saving resources.
Matteo (AGEA) asks:
"if Italy would like to test your Use Case, we just download it from Gitlab and we run the test?"
Mette answers that they are now testing before to move to second MS. Now they are not ready for automatic update. They have to train the algorithms using data not related to types classification in DK.

Mariano(TRAGSA):
Which kind of interoperability examples do you foresee to happen in UC5a?

UC1c is presented by Jane Jäger using this file
Dominique (ASP) asks:
"Have you any idea about when or how often it would be relevant for farmers to send or request data?"
It will be sent several times, ie. start harvesting season. This will be a voluntary process recommend by PA but not initiated.
Tamme (WG)
""is the scoreboard meant for the farmer, or for the administration?
It is meant for both PA and Farmer.
Jaap van Os (RVO) asks:
"What kind of data are the indicators about?"
It is basic info as declarations, FMIS, plant protection or Agri activities.
Fabio Slaviero (ABACO) comments:
@Jane: an example of scoreboard is available in the SOSTARE model, also mentioned in the NIVA GA
Marc (RVO) asks:
"do you have any first ideas on the farmer user interface?"
Yes, it will be connected to PA
Emmanuel suggests to organise a meeting between UC1b and UC1c in order to articulate /mutualize as far as possible our activities about FMIS data exchanges.
Mariano (TRAGSA) comments:
@Jane @Emmanuel, count also with TRAGSA for this Webinar UC1c UC1b

Decisions reached

- Define a common webinar between UC1b and UC1c

Follow up actions

Who?	**What?**	**Finished by?**
UC1b – UC1c Leaders	Define a common webinar	December 2020

Session Title: WP2 Use Cases UC3, UC4b

Session organizers: Jesper Stendal UCs leaders UC3, UC4b
Rapporteur: Jesus Estrada

Aim of the session:
Presentation of the current status of UCs. Emphasis on Testing phase and second MS testing phase.

Main topics covered:
Presentation of the session by Jesper. Overview and Main purpose. Towards large scale testing we try to answer:

- What components are the UCs and WP4 offering?
- Which of them will be tested and when?
- What are issues in moving them from one country to another country?
- Awareness of the testing PAs as a priority

UC3 is jointly presented by David Sanchez (FEGA) and Alicia Sánchez-Monedero (TRAGSATEC) using this file.
The UC has a first version of the datamodel agreed with the partners. The source code is uploaded to GitHub. There is an excel file showing the link between input data (JSON) and output data.
Main concepts in the model are: Farm, production units, agricultural blocks, crop activity and parcels.
Regarding testing there is a theoretical test (by LT, on the concepts of the model) and a practical testing by NL and Andalusia. They are still working on the testing and how to perform it.
Farmers, production unit, agri blocks, ropa parce crop activity
Dominique (IGN) asks:
"Is there already whole UC3 data model content in current Andalusian farm registry? If not, how to get the new one?"
David (FEGA) answers that "It is one of the answers we intend to achieve. And has all the needed data? Question to be answered"
Mercedes (TRAGSATEC) points out that there are no indicators now, just raw data.
Mariano (TRAGSA) comments that statistical data is a good dataset to be published as Open Data

UC4b is presented by Marc (RVO)
The presenters show an open question at menti.com/1800297, regarding the use of machinery data on each specific PA.
Fabio (ABACO) asks:
"What (type of, quantity of) data is sent back to the PA? Did you think at simple data connected to payment schemes without sending the whole activity map, like "ploughed (YES/NO)?"
The answer is that it is up to PA, so, what is expected to be received is a National decision.
Matteo (AGEA) asks:
"What is the planning for the test in Greece and Spain? do you need to run the test with a Bogballe machineP or can you use any other machine?"
No. The specifications can be something different and the pilot can use any other machine.
By the end of week there will be a meeting with Greece as Testing Country.
Tamme (WR) asks:
"Shouldn't you use some kind of blockchain to make sure the data is not manipulated?"
This question opens a discussion on the different ways to do this and how important is the data integrity issue. For example, Italy has a blockchain experience applied to agriculture.
Mariano (TRAGSA) recommends not use block chain directly with machinery data. It is better to use the FMIS resulting data.

Tamme points out to Mariano that “if a machine manufacturers' cloud can provide the 'Fabio-style' message that "this field is ploughed", a blockchain-like approach would be helpful to avoid tempering by the farmer …"

Session Title: WP2 – Large Scale Pilot Use Cases: UC1b, UC5b

Session organizers: Jesper Stendal UCs leaders
Rapporteur: Jesus Estrada

Aim of the session:
Presentation of the current status of UCs. Emphasis on Testing phase and second MS testing phase.

Main topics covered:
Presentation of the session by Jesper. Overview and Main purpose. Towards large scale testing we try to answer:

- What components are the UCs and WP4 offering?
- Which of them will be tested and when?
- What are issues in moving them from one country to another country?
- Awareness of the testing PAs as a priority

UC1b presented by Emmanuel, Guillaume and short intervention by Dominique using this file
First section of the presentation is linked to MAA and how were stakeholders (farmers, nature managers, water managers ...) involved in the designing process. Also, it is asked if the MAA French lists could be replicable in other countries. Answering that, three external PAs are asked about the following questions:

- Interest on the indicators
- Potential users of the UCs
- Foreseen difficulties

Folkwin (RVO) answers that the indicators are because they are connected to climate goals. The MAA table is similar and there are equivalent organizations and policy makers. Regarding difficulties, testing phase will be a good moment to analyze and solve them.
Jesper (DKA) comments that the main problem will be related to resources.
Javier Rojo (ItaCyl) comments that Carbon and Biodiversity are key elements, besides to those related to nutrient and used by FaST. The potential users will be all Future users of CAP.
Eric Ceschia comments that or TIER3 C indicator we also have discussions with cooperatives, agri-food companies and ADEME (French national agency for energy and environment), CNES (French spatial agency)...
MILENOV Pavel (JRC-ISPRA) asks:
"To Eric Ceschia: Could you please clarify the role of soil data in Carbon T3? Is it considered essential for the calculation of the indicator or just optional to fine-tune it? Do you plan to use national soil data, possibly available at larger scale, instead of global datasets? "
The answer is.
@Pavel : it's optional to fine-tune it. We have tested the use of national and global data. Too inaccurate for C budget calculation at plot scale (ex. for C credits certification) but they are PK for estimates of C budget at regional scale
Matteo asks if UC1b has considered the objectives of EU Biodiversity Strategy and the answer is yes.
Ferando Feliu (FEGA) comments that the methodology for the carbon storage indicator is applied at pixel, parcel, holding, and administrative unit levels. At holding level, it would be interesting to include permanent crops in tier 2 with FMI data (agricultural practices). Eric Ceschia answers that the method is unfortunately not adapted to permanent crops
Regarding a question by Mariano on more indicators, not only the presented, Eric comments: good idea, we could send them the list of the 11 indicators we had presented in February.
Fabio (ABACO) comments that the discussion on environment is interesting but we need to link this work to specific NIVA objectives.

Eric Ceschia answers that one the objectives is to show that IACS data can be useful for environmental issues, that would be one of the outputs of the project.

UC5b is presented by Salvatore and Fabio using this file.
Mariano (TRAGSA) asks
[12:21] Mariano TRAGSA asks Fabio if it makes sense to harmonize the Rule Engine with common parameters or it will be very dependent on country specificities. The same question is asked related to Smart Contract & click and pay.
Fabio answers that is specific to each PA and country but it is possible to copy-paste-adapt from one MS to other changing few things.
Dominique is answered by Fabio that the definition of a payment right is 'somewhat' standard, however the application of them may vary in different MS.
Emmanuel asks:
@Fabio or Salvatore : You indicate that farmers don't have to submit any application and this indeed a great simplification. But they still have to update their LPIS / agricultural parcel location/ EAFRD commitments / monitoring request in case of doubt. At the end, is it a real simplification for farmer or rather than other business process for IACS management ?
Yes, the basic concept is holding level. It is on the Interest of the farmer to keep up to date the farm dossier.
Fernando Feliu (FEGA) highlights that in order to make the greening payment you need to assess the compliance at holding level, no at a parcel level.

Session Title: Life after NIVA

Session organizers: Jaclyn Bolt, Tamme van der Wal, Folkwin Poelman
Rapporteur: Jaclyn Bolt, Tamme van der Wal, Folkwin Poelman

Aim of the session:
The main topic of this interactive workshop was to make an inventory of the needs of the NIVA partners as stakeholders and strongholders of the NIVA Innovation Ecosystem. What is needed to manage an Innovation Ecosystem, what is the value that partners see in (active) participation or management of this innovation ecosystem? The effectiveness of an Innovation Ecosystem requires an ongoing sustainable management beyond the project.
To ensure this, WP5 develops a road map for continued innovation management. The workshop also aimed at putting this WP5 task "on the map" and inspire partners to take note of plans and ideas to create continuation after the project ends. The harvest of this workshop will be used to really kick-start the work. The results will also be used to make the 2nd version of the D5.5 deliverable "Roadmap to IACS transformation".

Main topics covered:
Miro Boards were used to get the input of the workshop participants. The given input was also clarified and discussed during the session.
Reasons for joining the Innovation Ecosystem
Overall, participants mentioned they join the ecosystem out of a business interest, for knowledge sharing, to develop new tools and technologies, to prepare for new legislation, and to simply make things easier

Responses from tech providers:
- We are specialised in software for agriculture and the environment;
- This is the only way to achieve harmonisation, opening wider markets;
- Learn from the experience of others and create bridges between organisations;
- We are a technical state-owned company interested in this issue (CAP);
- To share knowledge and understand the needs of customers;
- To improve the work life of end users through technology.

Responses from government representatives:
- To understand the problems/needs of other stakeholders and geographies.

Academia:
- Because it's cool that we can use our knowledge to change European agricultural policy;
- I think we can help to bring science to practice;
- Science can have birds eye view on the matter (outside in);
- Grabbing opportunities of new technologies to improve (traditional) processes. Change!;
- To contribute to the development of European wide tools for the monitoring of agri-environmental indicators (e.g. C budgets);
- To increase the knowledge system.

Farmer representatives:
- Members get the best information for their management;
- To make things easier;
- PAs are the only data requested for ALL farmers, they can give the incentive for data standards;
- To leverage expertise and to deepen the agro knowledge and involvement.

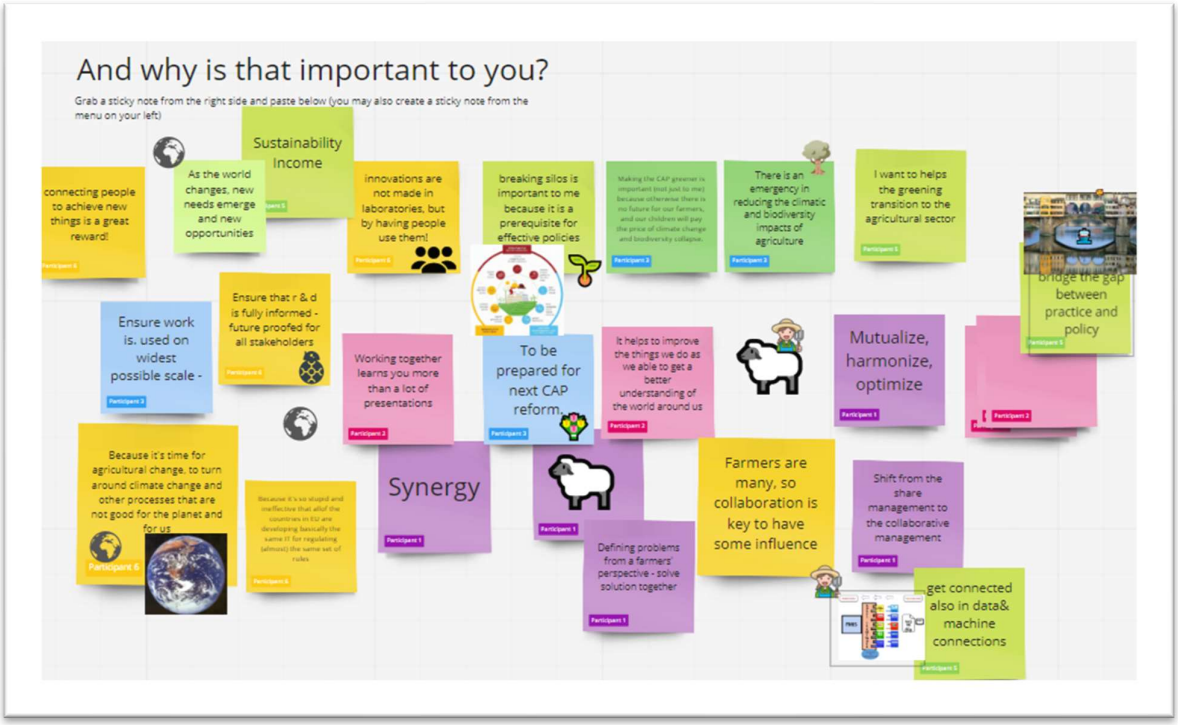
Paying agencies:

- To learn from other organisations that deal with the same topics, but also to get to know the different angles;
- To develop new technologies for future CAP management;
- To bring PA into the innovation stream;
- Prepare for the new CAP;
- To meet CAP2020 legislation in the best and most effective way;
- To develop stronger connections/widen the network.

Overall, the answers show a need to bring mutual learning, collective development and facilitate innovations to a next level. In the discussion, participants show disappointment in current constructs that are mostly focusing on sharing good results, not *in understanding others needs or co-*designing solutions. And even more responses expect something more from an ecosystem management, then just to organize knowledge exchange: setting standards, to help PA's in innovation management and to voice (technical) needs to policy makers.

<u>Reasons why it is important for the workshop participants</u>

The reasons behind joining the ecosystem are often more indicative of intrinsic values, such as social values as collaborating, harmonising, connecting, or other values such as continuation, or environmental values.



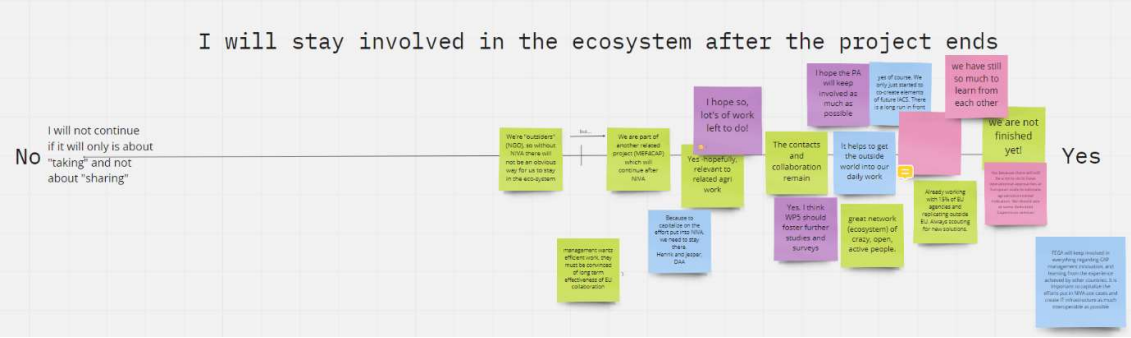
A sum up of all the reasons:

- Connecting people to achieve new things is a great reward!;

- As the world changes, new needs emerge and the opportunities;
- Sustainability income;
- Innovations are not made in laboratories, but by having people use them!;
- Breaking silos is important to me because it is a prerequisite for effective policies;
- Making the CAP greener is important (not just to me) because otherwise there is no future for our farmers, and our children will pay the price of climate change and biodiversity collapse.;
- There is an emergency in reducing the climatic and biodiversity impacts of agriculture;
- I want to help the greening transition to the agricultural sector;
- bridge the gap between practice and policy;
- Mutualize, harmonize, optimise;
- It helps to improve the things we do as we able to get a better understanding of the world around us;
- To be prepared for next CAP reform;
- Working together learns you more than a lot of presentations;
- Ensure that r & d is fully informed - future proofed for all stakeholders;
- Ensure work is used on widest possible scale;
- Because it's time for agricultural change, to turn around climate change and other processes that are not good for the planet and for us;
- Because it's so stupid and ineffective that all of the countries in EU are developing basically the same IT for regulating (almost) the same set of rules;
- Synergy;
- Defining problems from a farmers' perspective - solve solution together;
- Farmers are many, so collaboration is key to have some influence;
- Shift from the share management to the collaborative management;
- get connected also in data& machine connections.

In the discussion, participants showed a great involvement in the greening and sustainability challenges of the agricultural sector and expect that their work on IACS systems can greatly contribute to that.
Also, participants indicate that there are many efficiencies gains possible in the innovation and development process of PAs through better collaboration on implementing the CAP regulations. Even more, PAs can collectively address implementation issues to policy makers to avoid mismatches between policy needs and implementation demands.
Also, in the discussion, participants support the notion that the Ecosystem should help in breaking down silos from different policy domains. The data sharing context in the NIVA project addresses this aspect and PA's can be more prepared on requests from (and synergies with) other domains.
The partners all agreed that an ecosystem should have enough stakeholders and from diverse nature, in order to create cross-pollination on the different topics. This not only means different countries and different types of organisations, but also different departments from within organisations, like IT departments and regulation implementation people from a PA.
Concerning software collaborative development, a discussion was held on the role and relevance of open-source components. Conclusion was that open source is part of a choice on how to spend your money, definitely not a solution to get cheaper development. Also, Open Source requires maintenance and management.
The participants also discussed on the use cases in the project. For an ecosystem, it is important that use cases have clear links with what and how things can be improved in the organisation. What do you want to achieve? This is missed from some use cases right now.

<u>Indication if and why (or not) the workshop participants want to stay involved in the ecosystem after NIVA</u>



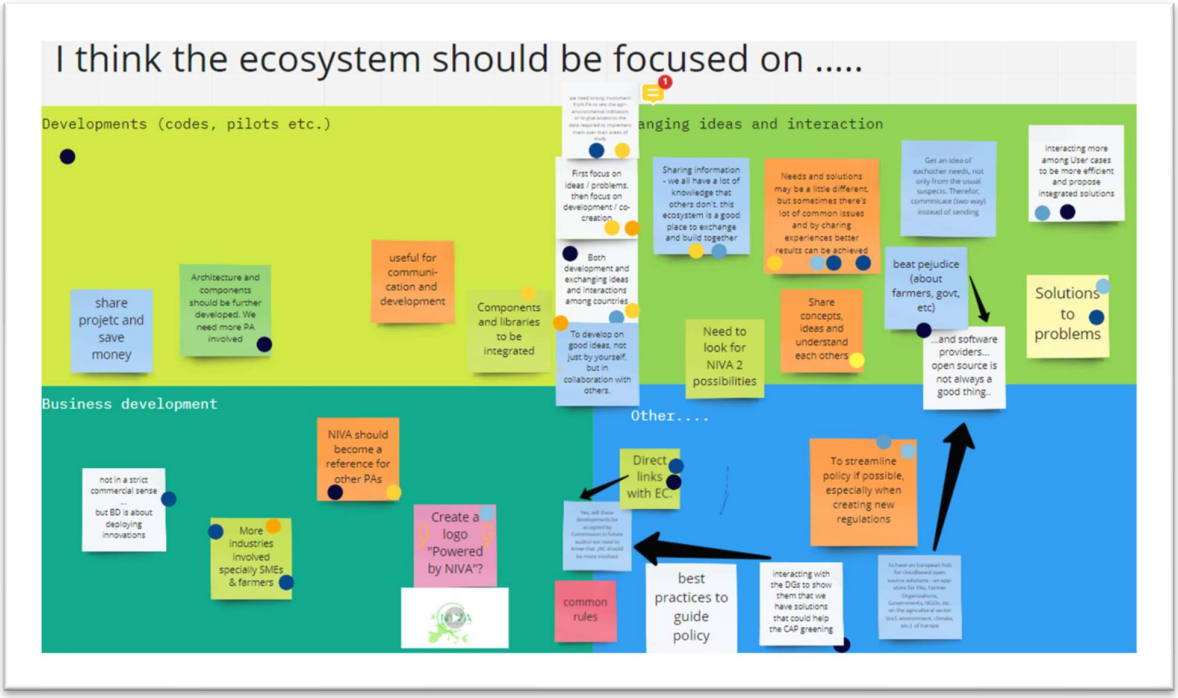
A quick view at this board shows a favour to 'yes'; participants would like to stay involved in NIVA after NIVA.

One person mentioned they would not be interested to continue if "it will only be about taking and not about sharing". This implies that the Ecosystem is a collaboration of active organisations and people. The ecosystem could be a continued development in which different projects can help to accelerate on specific targets. Different members of the ecosystem participate in different projects.

Some remarks about reasons to join:

- We (an NGO) are outsiders, without NIVA there will not be an obvious way for us to stay in the eco-system, but we are part of another related project (MEF4CAP) which will continue after NIVA;
- Management wants efficient work, they must be convinced of long-term effectiveness of EU collaboration;
- Because to capitalise on the effort put into NIVA, we need to stay there;
- WP5 should foster further studies and surveys;
- Yes, because there will still be a lot to do to have operational approaches at European scale to estimate agro environmental indicators. We should aim at some dedicated Copernicus services;
- FEGA will keep involved in everything regarding CAP management innovation, and learning from the experience achieved by other countries. It is important to capitalize the efforts put in NIVA use cases and create IT infrastructure as much interoperable as possible;
- We only just started to co-create elements of future IACS. There is a long run in front;
- Already working with 15% of EU agencies and replicating outside EU. Always scouting for new solutions.

<u>What should be the focus of the Innovation Ecosystem: Developments (codes, pilots, etc.), Exchanging ideas and interaction, Business Development, or Other</u>



Most responses were placed under development and the exchange of ideas and interaction, at times ideas were connected to each other. The dots represent 'likes' by other participants. Ideas without likes were not necessarily 'not liked'. Also, several post-its were placed on both 'development' and 'interaction', indicating the importance and linkage of both fields.

In order of popularity:

- Needs and solutions may be a little different, but sometimes there's lot of common issues and by sharing experiences better results can be achieved
- Both development and exchanging ideas and interactions among countries
- More industries involved specially SMEs & farmers
- NIVA should become a reference for other Pas
- we need strong involvement from PA to test the agri-environmental indicators or to give access to the data required to implement them over their areas of study
- First focus on ideas / problems. then focus on development / co-creation
- Sharing information - we all have a lot of knowledge that others don't, this ecosystem is a good place to exchange and build together
- interacting more among User cases to be more efficient and propose integrated solutions
- To streamline policy if possible, especially when creating new regulations
- Direct links with EC.--> Yes, will these developments be accepted by Commission in future audits? we need to know that. JRC should be more involved
- Solutions to problems
- To develop on good ideas, not just by yourself, but in collaboration with others.
- To streamline policy if possible, especially when creating new regulations
- NIVA should become a reference for other Pas
- Components and libraries to be integrated
- not in a strict commercial sense ...
- but BD is about deploying innovations
- Architecture and components should be further developed. We need more PA involved

- To have a European hub for cloud based open source solutions - an app-store for PAs, Farmer Organizations, Governments, NGOs, etc. on the agricultural sector (incl. environment, climate, etc.) of Europe
- beat prejudice (about farmers, govt, etc) ...and software providers... open source is not always a good thing..
- Get an idea of each other needs, not only from the usual suspects. Therefore, communicate (two-way) instead of sending
- Need to look for NIVA 2 possibilities
- share projects and save money
- common rules
- Yes, will these developments be accepted by Commission in future audits? we need to know that. JRC should be more involved
- best practices to guide policy
- interacting with the DGs to show them that we have solutions that could help the CAP greening
- To have a European hub for cloud based open-source solutions - an app-store for PAs, Farmer Organizations, Governments, NGOs, etc. on the agricultural sector (incl. environment, climate, etc.) of Europe

There was a good discussion about the topic of "Powered by NIVA", representing both the aspect that participants are proud to be involved and the fact that the Ecosystem can deliver a certain level of quality – that stands out. As example was mentioned that PA's that use a specific 'certified' NIVA component, could be excluded from specific audits on this aspect.
Overall, the workshop was delivering a great amount of inputs that will be absorbed and integrated in the work of task 5.5 on developing this roadmap. The workshop also created enthusiasm for the task in a wider circle in the project. Many participants "volunteered" for making an interview.

Decisions reached

- Decision 1: The participants want to be part of the Innovation Ecosystem
- Decision 2: Partners made themselves available for interviews by WP5

Follow up actions

Who?	What?	Finished by?
Jaclyn, Tamme, Folkwin	Harvest the input and process in in the D5.5	M21
Jaclyn, Tamme, Folkwin	Plan interviews	M20

Session Title: Open EO & WP4 infrastructures, incl. CEF components

Session organizers: Cecilia Sciarretta, Marco Corsi, Matteo Rastelli
Rapporteur: Matteo Rastelli

Aim of the session: Use of OpenEO and other WP 4 components

Main topics covered:

1. Started off with a discussion on whether we are working on an overall new IACS or whether it is more on bilateral connection between apps.
2. OpenEO: Marco Corsi demonstrates the OpenEO functionality and set up, and shows that there is an NIVA OpenEO implementation. A small recordings is available of a reduced demo.
3. Sinergise also build a component on top of OpenEO, showing how that component as process can be started.
4. NP is building a component for data signals with an integration of different data sources into an overvall frame, to be distributed, including a link to IoT data.
5. Plans for integration of the components together into one solution
6. Questions:
    a. Dominique Laurent: Is the data import from gaiasense FMIS using the eCROP standard?: There is contact with the colleagues from NL on eCROP, but not yet resolved.
    b. Pavel Milenov, JRC: Could you please provide some details on how you (plan to) achieve semantic interoperability? Would you rely on ontologies, such as OWL? à More focused on OGC standards, and JSON formats, so OWL is currently not planned, as it creates the data volume. In response Pavel Milenov mentions that: There is some relevant work in this respect within ISO TC 211 - OWL, Land Cover Meta Language, future Land Use Meta Language
    c. Fernando Feliu, FEGA: Can the component's functions process a high number of parcels at the same time? There is the possibility to provide this function as long as the back-end implements the function. The objective of OpenEO is to allow to have a unique API to access multiple services from multiple providers. If a specific function is needed for testing (UCs), the task will focus on providing the function.
    d. Nikos Petalidis, OPEKEPE: Where does OpenEO fit in the current workflow of NIVA components, for example in the link with SEN4CAP? An automatic link to SEN4CAP is not automatically foreseen (as this is substantial work), however based on the data-products for SEN4CAP. This is also foreseen for different data services, like SEN4CAP. Grega mentioned that the OpenEO API was foreseen to deal with the higher complexity of the Remote Sensing data. The OpenEO API should be used to by all NIVA components as a standard for all NIVA Components exposing API. We should go beyond the prop
    e. Nikos Petalidis, OPEKEPE: Seems that there is a general possibility to link to NP Data Signals component to GeoTagged Photo's and FMIS data. Did you look at the data formats of the UC4a? Is it compatible with that?
    f. Grega explains that the background of OpenEO API is to provide a general set up for API in a modern way and overcoming the issues related to OGC services. As an example the old processing standard of OGC WPS does not allow execution of workflows and standards like OGC WMS and WFS have been superseded by REST API and file-based API like S3.

g. Sofia Siachalou, OPEKEPE: How can someone test the editor? are there any special credentials in the context of Niva? Do we have access for testing? Marco mentions that the components are not yet finalized in production, so this first needs to happen. The technical partners have a good momentum, and will organize a training session. In any case, the editor is available with the possibility to access (only in read mode) to some of the services provided by the OpenEO consortium at https://hub.openeo.org/ while there are some demostration available of the use of OpenEO on youtube: https://www.youtube.com/watch?v=E0wtDvm2SfA and https://webcast.ec.europa.eu/workshop-on-big-data-and-artificial-intelligence-for-earth-observation-h2020-space-projects-2017-2020-19-11-20 (from minute 32:00 about). All the material for developer is available on the https://openeo.org/ and https://github.com/Open-EO

Decisions reached

- In set up of NIVA tools as one overall system, or as new components coupled to an old IACS? This was triggered by a question from OPEKEPE (Nikos) on the link between Geo-tagged Photo link (or other Machinery Data). Matteo mentions that Irish can provide more information and encourages OPEKEPE to get in touch.
- There is a need for training on OpenEO training and tutorials once it is finalized, so that NIVA Partners in their component and API developments embrace the OpenEO standard, thereby easing the re-use of their components
- Assess the feasibility of deploying OpenEO as a standard for NIVA components with an API.

Follow up actions

Who?	What?	Finished by?
Nikos, Kostas	Contact Irish team to find out about connecting the UC4a app to the OPEKEPE IACS as testing country, and/or link between Geotagged photo app and UC 1a components on Yellow parcels	31 Dec 2020
Marco with T4.2 partners (e-GEOS, Sinergise)	Finalise the NIVA Open EO components	31 Dec 2020
Marco with T4.2 partners (e-GEOS, Sinergise)	Provide pointers to relevant OPenEO resources already available as tutorials	31 Dec 2020
Marco with T4.2 partners (e-GEOS, Sinergise)	Plot the OpenEO role in the NIVA overall architecture with WP2 leadership	31 Dec 2020
Marco with T4.2 partners (e-GEOS, Sinergise, NP)	Provide training on the NIVA common components once finalized to ensure that partners can easily adopt the common components	31 March 2021

Session Title: Data sharing within the context of IACS

Session organizers: Dominique Laurent (IGN)
Rapporteur: Mariano Navarro (TRAGSA)

Aim of the session:
Exchange our ideas about which IACS data should be shared and how
Ensure some articulation between NIVA and DG AGRI activities and strategies on data sharing

Main topics covered:
Data Sharing activities NIVA WP3 (Dominique Laurent WP3)
There are regulations encouraging data sharing (INSPIRE, Open data) and some encouraging data protection.
Mohamed DG AGRI: Take also into account the new CAP and article 65
Mariano: Data protection sometimes is only a resistance from PA to additional work. Main issues are unclarity of the beneficiaries of thees datasets and lack of harmonization.
Current data sharing under DG-AGRI-JRC support mainly GSAA & LPIS
Mohamed DG AGRI: Remind that new CAP guarantees that all spatial data under INSPIRE without personal information should be available.
NIVA has further datasets to share. Investigation is conducted among stakeholders of mainly two domains (Agricultural & Environmental, General, (research, statistics))
Users are interested by quality controls of data (perhaps monitoring and traffic lights will help to make this data more transparent)
LPIS GSAA Data Sharing (Laura Ruana Pavon PA Catalonia)
The law in Catalonia since 2019 forces to share data. If public data is not shared, it must be justified.
PA Catalonia provides different products: LPIS, crop type map, claim year declaration layer and farm holding. It plans to provide more GSAA data and average NDVI profiles of crops over a year.
All campaigns of GSAA use same ID_EXP, unique identification number.
LPIS is providing with a land use information (common values in Spain): this land use information may correspond to a crop type (e.g. olive tree) or to a crop group (e.g. fruit tree)
The holding map data is anonymised but includes age and gender of farmers and other information about the farm. There were many requests and interest about this data (young farmers, gender studies) but also lots of debate, data was not easy to publish, we asked our legal service.
SEGES: What about industrial secrets?
Laura: this was not considered. In Catalonia, legislation is other side: you must justify what you don't publish
It is an open discussion that needs to be clarified and harmonized across EU.
Pavel Milenov JRC-ISPRA: we use a lot of data from PA Catalonia: access is fine but we often need cooperation to understand the concepts => it is important to understand what is published in order to use it properly. Semantic interoperability of data is also something to be addressed. There should be more efforts on ontologies; or instance, it would be worth, for Land Cover & Land Use data, to take into account the ISO standard LCML (Land Cover Metadata Language).
DG Agri initiatives (Mohamed DG-AGRI)
There is a new project called IACS 65. Piotr (or Pavel) is the contact point. One of the objectives is to demonstrate data sharing through practical examples focusing on soil health and others such as potentially LULUCF, statistics, crop types/yield, CAP indicators.
For soil health, the principle would be to combine IACS data with other data, to run it in models for deriving indicators about soil erosion, soil health …. Mohamed encourages collaboration.

Sander: on Soil Health, we are making such a system for soils in the Netherlands, called: www.openbodemindex.nl, it is using IACS data.

Pavel JRC: it is important to be very careful about technical aspects. To wrap up, soil is becoming more and more important in agriculture. 4th December, Soil day. The CAP and the green Deal will define the process.

Mohamed: we take care of business secret but not everything is secret; for instance, the crop type or the fertilizer type may be published whereas the fertilizer brand is secret and not necessary. We should have fair rules.

Mariano: everyone can see what occurs in a parcel, there is no secret about it; regarding fertilizers or plant protection products, it may be considered as secret. We have to find ways to provide information (e.g. derived indicators) while keeping the business secret. We should have a balanced approach.

Trade off, industrial secrets and public information discussions should be fostered to address the common path to follow.

Decisions reached

- Decision 1: WP3 to have more discussion with DG AGRI and JRC
- Decision 2: everyone is invited to attend the next webinar co-organised with capigi about data sharing
- Follow up actions

Describe in who, what, when?

Who?	**What?**	**Finished by?**
NIVA partners	To facilitate interviews with target groups	

Session Title: Added value of NIVA. Innovations in NIVA across the board & adopting NIVA innovations in PAs

Session organizers: Tomaso Ceccarelli. Matteo Rastelli
Rapporteur: Tomaso Ceccarelli

Aim of the session: analyse barriers for the adoption of NIVA's products by Paying Agencies and possible proactive actions

Main topics covered: we start from the consideration that we may have good products and connections with stakeholders but this won't be sufficient to ensure the uptake by PAs (NIVA's partners and external).

What is innovation ? Innovation is not just about developing technology, it's important that they get adopted, become part of common processes, preferably cross MS. Adoption of tools and components is key, otherwise you might say that the project failed and we had no innovations. We are not just referring to 'inventions' but actually more to process innovations (and combination of innovations). This includes innovative technologies possibly not being used, but now put in practice to support reorganizing processes. The case of geotagged photos, for instance, is a very concrete and thought of UC. There are plenty of geotagged applications available. The innovation here lies in a user-centered approach initiated at early stages, which helps understanding behavior attitudes in users (farmers, agents, PAs), creating mutual trust as a condition for acceptance and adoption in IACS processes; also, the openness of the solution (not relying on other technologies) helps. But how easily is it replicable to other use cases, e.g. in Greece or Italy ? We still need to see this in the perspective of other MS (Large scale pilots), with their own specific needs for geotagging. Moreover, NIVA is promoting pan-European standards, essential for e.g. harmonization of data reporting, which should be regarded as an innovation in itself and is probably one of the most innovating points of NIVA.

Are **open solutions** necessarily all good in cost/benefit terms? Is open source more a "message" than anything else ? Open source does not mean costless or cheap, commercial closed source can be better/cheaper depending on the situation. The example of Sen4CAP which takes a lot of effort to deploy in the PAs' systems. In general open solutions are not easy to be adopted by PAs (although many do, already). But, is it a matter of open solutions as such or of specific cases? Difficulties with Sen4CAP are not related to this. The quality of the components developed determines how easy it is to integrate them in the PA systems, regardless if it is open or closed source.

Were the PAs needs sufficiently expressed in NIVA ? These were initially implicit. They need to be made more explicit in terms of **value propositions.** What is the value we bring to the market? There should be tangible advantages (economic, social) and overall this is about reducing burden. PAs are not after innovation as such, they will only consider adopting if the proposed solution are ready to be adopted, can fit "smoothly" in their organization and is easy to maintain. They need to solve problems. There's also a cultural aspect: PAs do not want to introduce something new as it requires new/more people, knowledge etc. That's usually the last that they want.

Every individual PA works differently, so we need to understand their **functioning and motivation**. For geotagged photos, for instance, some of the PAs outside NIVA have shown interest. This is a very valuable indication on its value proposition.
What are the possible **blocking factors?** Strategic planning already in place (contractual obligations/agreements), not enough resources to change the process, IT service providers' networks already in place; competing products; procurement rules making adoption difficult or delayed; lack of

political will in deploying innovation; Insufficient awareness by (real) decision makers in PAs; disconnect between developers and implementers (wrong/incomplete messages are conveyed).

How can we promote adoption with PAs? First of all ensure that UC innovations are well understood within NIVA in the first place. Ensure the solutions work well. Demonstrate they make organization processes easier/more efficient and reduce administrative costs and (farmers') burden. Innovation as such is not a winning word with PAs. Identify decision makers/actors within PAs and work out targeted value propositions and communication, differently for managers/responsible for procurement , IT departments and commercial technical partners. Distinguish between PAs: they are different in terms of processes and attitude towards innovation. Importance of addressing (commercial) service providers with focused value propositions. For PAs and their technical partners especially, an effective proposition would be to show NIVA's solutions in a "bigger picture", how to integrate/adapt to other products needed by PAs. What's the added value of that (and how much efforts, money, problems are involved).

Decisions reached
Possible actions include:

- clearer and more targeted value proposition for UC innovations introducing business case elements,
- Need to elaborate demo cases as proof of tangible value addition of NIVA. If we show a UML diagram most won't understand…
- Need for targeted communication with PA managers and also focused to IT commercial partners (and subcontractors)
- There are many suitable occasions for doing so, e.g. learning network

This has to be framed in time. Also, who will be responsible during and after NIVA ?

Follow up actions

- To sharpen the value proposition(s) for the different use cases and for the different actors: by respective UC leaders
- To present NIVA at the learning network through concrete demos e.g. on the geotagged photos: start with UC 4a.
- To work out the "innovation" or "adoption journeys" (from business case to implementation) including the elements and actions emerged in the discussion: to be elaborated by WP2 and WP5.
- Will also be considered in the stakeholders analysis: by WP5.

We have not gone as far as establishing responsibilities for a follow-up; but responsibility lies with UC leaders (refining innovation content and value proposition), with WP2 and WP5, with possible support by others more connected to PAs and their commercial technical partners . To be confirmed and decided in a smaller focus group (the PA adoption group) ?