

## Minutes

### 3<sup>rd</sup> Transnational Meeting

### Zabrze (Poland) 27-28 June 2016

**Participating Partners:** IES La Foia –Spain (Foia), Tehnička škola Sisak – Croatia (Sisak), Zespół Szkół –Poland (ZS10), Šolski Center Krško-Sevnica –Slovenia (Krsko), Asociación de Investigación de la Industria del Juguete, Conexas y Afines – Spain (AIJU).

**Attendees:**

**Teachers:** Juan Manuel Bernal (Foia), Jorge Brotons (Foia), Ivana Šmint (Sisak), Zrinka Tomljenović (Sisak), Małgorzata Jurczyk (ZS10), Wirginia Tomczyk (ZS10), Anna Zwolińska (ZS10), Sławomir Nadolski (ZS10), Franci Uduč (Krsko), Svetlana Novak (Krsko), Ruperto Martínez (AIJU), Ignacio Seguí (AIJU).

**Students:** Javier Bueno (Foia), José María Cruz (Foia), Ivan Jantak (Sisak), Bernardo Kaukivić (Sisak), Simon Javeršek (Krsko), Domen Gunčar (Krsko), Patryk Jewiak (ZS10), Mateusz Greiner (ZS10),



Making and designing a toy drone through multidisciplinary collaborative work

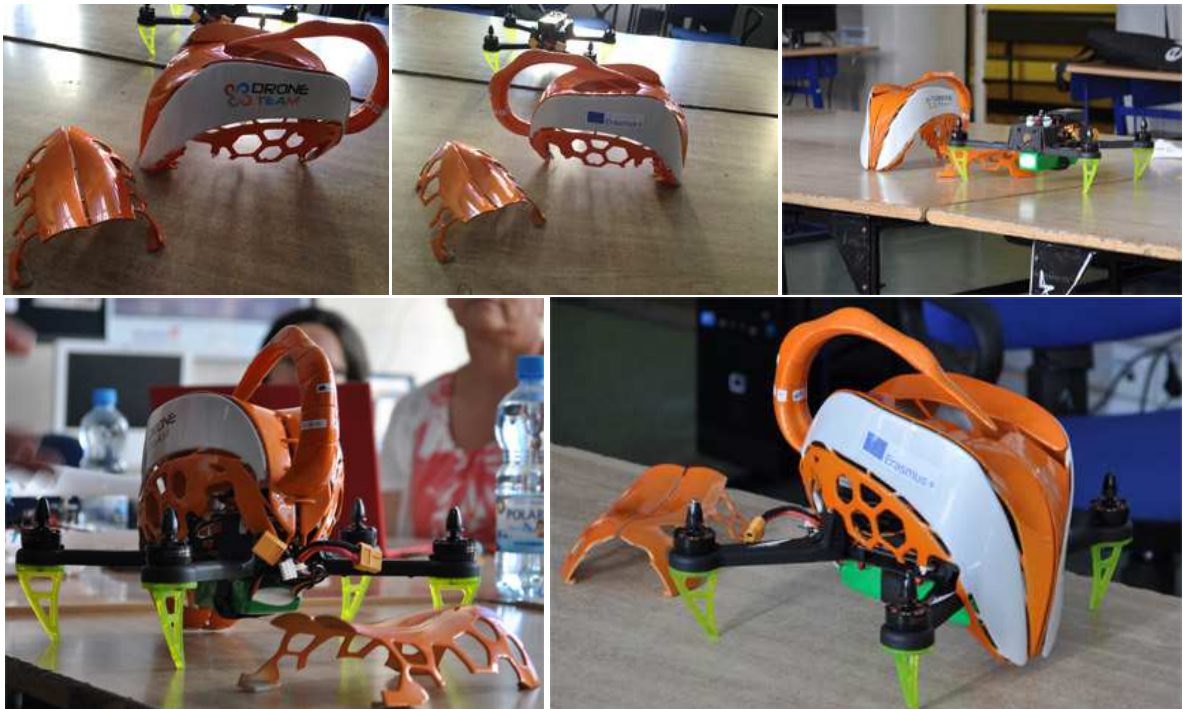
Project no.2015-1-ES01-KA202-015925

### Day 27th June 2016

- After being welcomed of attendees, the meeting starts reviewing the Agenda at 9:10h.

#### **Overview of partners' activities from last meeting. Progress made and experiences assembling 1<sup>st</sup> basic drone. Review of dissemination activities per partner.**

- Mr. Ruperto Martinez from AIJU presented the frame design and explained how first frame for basic drone was created. After generating the 3D CAD design, the technology of selective laser sintering is used for obtaining the physical pieces in polyamide. Afterwards, sanding and painting is applied for obtaining the first frame. The idea is that from the first drone frame and 3D CAD information, all schools can adapt the design to print parts with standard 3D printers.



- Mr. Jorge Brotons and Juan Manuel Benal from Foia reviewed the dissemination did in Spain. The most important was the visit of the regional responsible for education and the Droneteam invitation as an example project in the Congress held in May in Valencia in the so-called *Primavera Educativa*.





- Ms. Ivana Šmint from Sisak told the dissemination activities and activities related to the components and assembly of the first drone in a technical workshop with students, identifying the difficulties and problems encountered.

- Mr. Franci Uduč from Krsko explained the activities carried out with the drone and the difficulties encountered. This first phase has been difficult because of the large number of steps and concepts to take into account and the novelty of assembling components with little information available, becoming a challenge. As most important dissemination activity is the publication with double page in colour in the school magazine GPS NOVICE.



- Ms. Małgorzata Jurczyk and Ms. Anna Zwolińska from ZS10 did a review of the activities related to drone components and related to the project website. The Droneteam Youtube video channel is also available in addition to Facebook and Twitter:

<https://www.facebook.com/droneteamproject/>

twitter: @droneteamproj

Droneteam Youtube Channel is directly accessible by clicking on the Youtube icon in project website: <http://droneteamproject.eu/>

Mr. Sławomir Nadolski from ZS10 presented the experience with drones in classroom.

The main dissemination activity conducted was the event organized the 6th of June ZS10 2016 where teachers and students knew the Droneteam project and drone experts were invited who made presentations and demonstrations about the use of drones. They have created a space in the school where images and project progress are updated, so that everyone in school knows about DroneTeam Project.



**Students workshop**

Students had a parallel workshop to acquire the knowledge base on robotic components that are also used in the drones: microcontrollers, servomotors, sensors, etc.



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Students explain ArduPilot 2.6 specific controller for drones that will be used in the advanced drone, Kanda adapter, AVRDUDE application and the problems found with these incipient technologies



Students from Foia presented their experience in the assembly. Explaining the problems found, and showing several videos of the first basic drone flight.



### AIJU explanation of the correct basic drone assembly.

- Mr. Ruperto Martinez from AIJU showed how to correctly assemble the basic drone. Both teachers and students followed the explanations and verified the correct assembly of engines and propellers. They are verified and the problems that each of the teams has been detected. This is especially relevant since in this way educational materials are best prepared.



There is no time for more. End of first day.

## Day 28th June 2016

### **Review Intellectual Outputs. Speaking about Progress Report.**



Mr. Ignacio Segui from AIJU reviewed the Droneteam Google Drive repository. It Urges all partners to complete all sections and upload presentations and administrative justification in the platform. Review of Intellectual Outputs, project schedule, work-plan, dissemination activities.

We discussed about the creation of the glossary of terms. We will use Moodle and, eventually, Google docs for concurrent work.

Planning of activities for coming months are fixed:

All partners: remember upload all presentations and docs to google drive

Foia: Progress report, mobility tool, testing plastics&design propellers for mini-drone (with the idea to develop a vacuum casting mould)

AIJU: minutes, review Google Drive, support schools in basic drone. Flyer for dissemination in next meeting.

ZS10: update webpage, manage moodle platform, LibrePilot tutorial.

Sisak: design frame for 3D printer.

Krsko: first Test of mini-drone in wind tunnel (20cmx20cmx20cm)

### **Remember de Date for the 4nd Transnational meeting fixed:**

29th-30th September and 1<sup>st</sup> October 2016 in Krsko (Slovenia). Saturday 1<sup>st</sup> October coincides with con TEHNOGENIJ event.

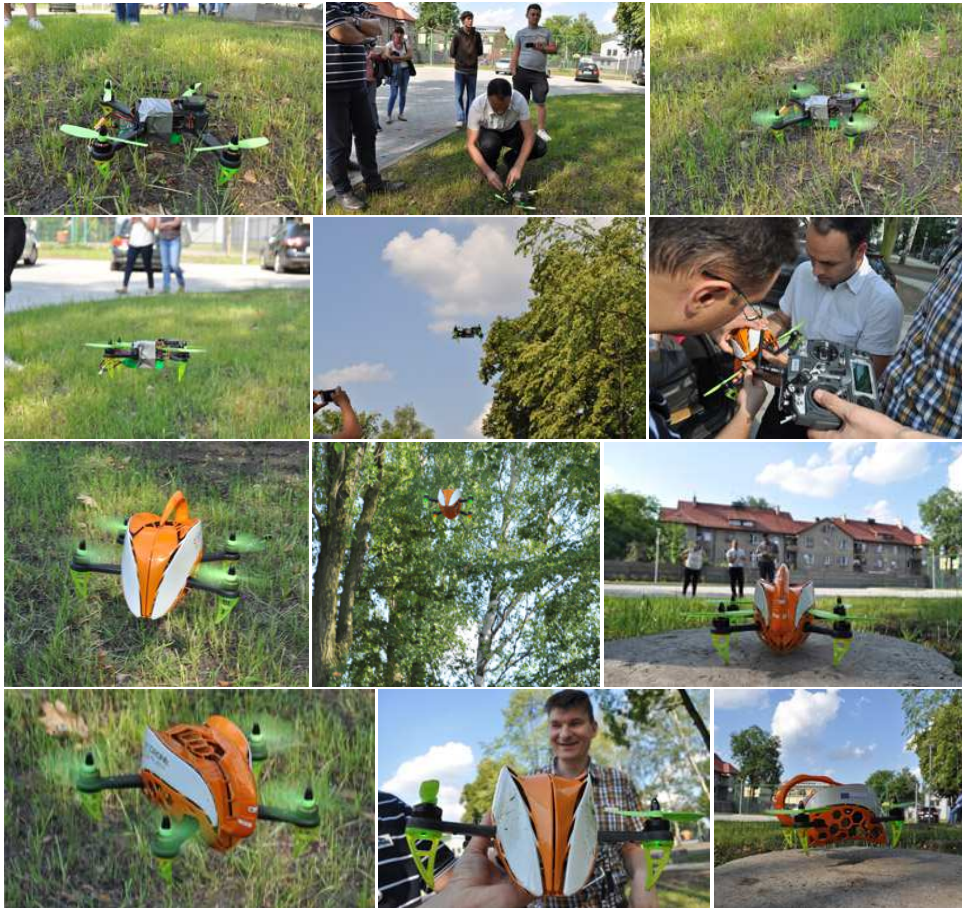
- **Quality survey:**

The meeting ends with the realisation of a quality survey of this 3<sup>rd</sup> Transnational Meeting. You can find in Annex the results of this survey. As a summary of the quality survey, we must improve for the following transnational meetings: 1.

Drone English Glossary.

In general, all attendees were very satisfied with the meeting, with workshops related to assembly components, with students and with the partner hosting the meeting.

**Trial flight of the first basic drone testing the frame prototyped**



**Cultural visit.** After meeting time, Consortium visited the Luiza Coal Mine



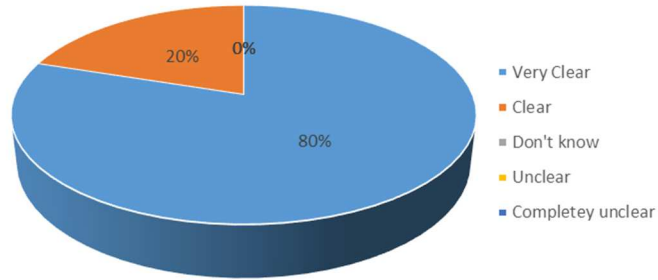
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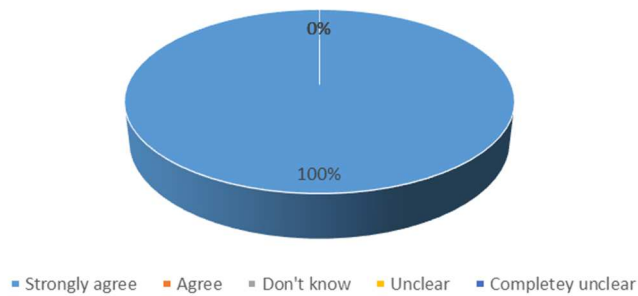
**ANNEX: Quality Survey Results**

**A) THE PROJECT AS A WHOLE**

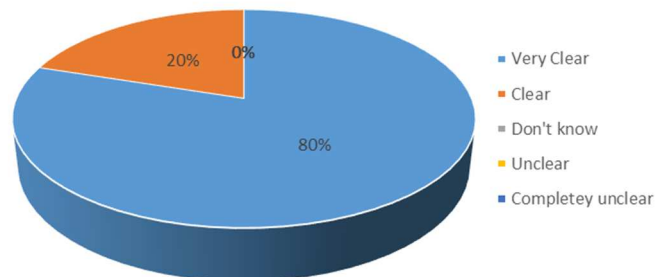
1. After meeting, how clearly do you understand as a whole the overall project aims and activities to be accomplished?



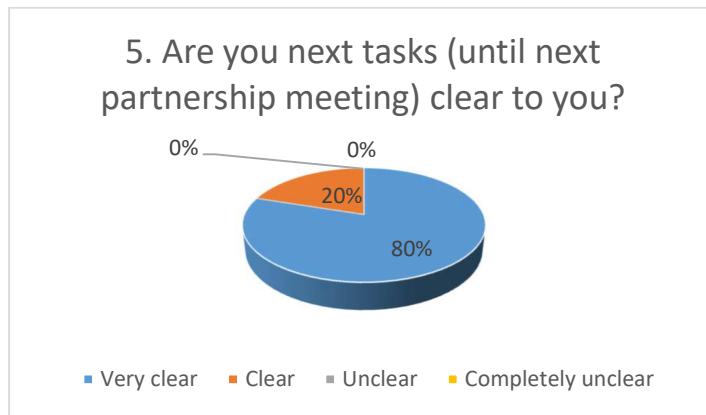
2. How much do you agree on the fact that the meeting is needed for proceeding with the project in good way?



3. How clearly defined are each partner's role and responsibilities as a whole within the project?







How do you think the partnership									
Please, define what you think is missing or needs to be improved	Work about glossary is now the task we need to improve.	The partnership worked very well so far and all the partners help each other and collaborate with each other, resolving problems and fulfilling all the tasks	It works OK	At the moment, in my opinion is all correct	The partnership worked fine so far. If we have some issues to discuss we're got all the answers. I hope this is foing to be in the future too	Everithing is just fine	Excellent communication!	Everything was correct	The partners has worked very hard with their students for try to do the assembly with them. They need work time for finish their job

**B) MEETING ORGANISATION**

<b>B) MEETING ORGANISATION</b>	1	Did the meeting closely follow the									
		Yes, very closely									100%
		More or less									0%
			No, kept going off topic								0%
	2	Did the meeting follow the needs of understanding of partners?									
		Yes									100%
		More or less									0%
			Not at all								0%
	3	Were all partners given time and opportunity to contribute to the									
		Yes									100%
			No								0%
4	Had partners' needs and questions been given proper space and										
	Yes									100%	
		No								0%	
5	Were partners' presentations										
	Yes									100%	
		No								0%	
6	Was the meeting venue comfortable and appropriate?										
	Yes									100%	
		No								0%	
7	To what degree do you feel the entire partnership was committed										
	Highly committed									70%	
	Committed									30%	
	Not very									0%	
		Not at all								0%	
8	Regarding on the project progress, do you think the objectives are										
	Very sure									50%	
	Sure									50%	
	Unsure									0%	
		Not at all								0%	
9	What presentation/issue in this meeting do you think was successful or more interesting?	Drone Assembly	The topics were relevant and educational. It was very useful to exchange experiences with other partners	Workshop - how to have correct drone assembly	The presentation of Polish Student	The drone or all technical issues	Workshop were very interesting and helpful	Assembly issues. Information about activities conducted by each	Workshop: assembly	The one of the Polish students	The presentation about school's problems with drone assembly
10	What presentation/issue do you think could have been improved, and what can be done about this in future meetings?	Work about English Glossary								All presentations were correct	Presentation about how to flight the drone
11	Are there any other comments you wish to make? (about project, this meeting, etc.)	I feel very interesting the project and for students is also very interesting	Very good organization of the meeting	Very good organisation!	No	Everything is perfect	Well organised!			No	Good welcome from Poland team & good attendance