



Specialized equipment procurement, assembly and training for the new Photogrammetry and Remote Sensing laboratory, October 2017

Procurement of the equipment for unmanned aerial system for aerial photogrammetry has been finished. In the beginning of October 2017 assembly of the gear has started and later on the training for using this system will be given by supplier. This special equipment consists of one industrial grade flying platform, DSLR camera, universal gimbal for the balancing almost any kind of heavy sensors, additional batteries and controller for camera and other gear and spare parts that are needed for normal functioning of this system (some of the equipment and its specification are shown in Table 1).

1	Flying Platform	Flying platform: DJI Matrice 600 Pro (M600 Pro) Flight Controller: DJI A3 Pro with three GPS modules Number of rotors/propellers: 6 actively cooled motors Max Takeoff Weight: 15.5kg with max. 6kg of payload Hovering Time (with six TB47S batteries): No payload - 32min, 6kg payload - 16min In the box: 1. Aircraft body with two landing gear legs, two springs and two landing skids 2. Remote Controller (DJI Matrice 600 Remote Controller for Lightbridge 2 (Black)) 3. Intelligent Flight Battery (TB47S) x6 4. HEX Charger, Inner Foam Case and appropriate cables, knobs and screws
2	Camera Controller	Additional DJI Matrice 600 Remote Controller for Lightbridge 2
3	Camera Gimbal	Camera Gimbal: Ronin-MX , universal professional 3-axis hand held stabilization
4	DSLR Camera	Camera: Canon EOS 6D for aerial photography Megapixels: 20 Mpix Sensor: Full frame CMOS (36 x 24mm) Processor: DIGIC 5+ GPS & WiFi: Yes, built in
5	Tablet	Tablet: Ipad mini 4 WiFi + Cellular 128GB used for mission planning and telemetry monitoring during the flight

Table 1: The most important parts procured for this specialized system

On the occasion of finishing the procedure of procurement for this part of specialized equipment, a ceremony of this equipment acceptance at the Laboratory for Photogrammetry and Remote Sensing has been arranged. The role and importance of the procured equipment is thoroughly explained to the students that attended ceremony. Students were very interested in this matter and had a lot of interesting questions about the gear. It is expected that this system will have a great importance in providing specific novel skills for students and researchers at DGG.



Fig. 1: Parts of the UAS equipment



Fig. 2: Students attending ceremony

This gear will be used for image acquisition within photogrammetric projects. Some of these project will be implemented within the following courses on MSc of geoinformatics: Photogrammetric Engineering, Digital Photogrammetry and Project Work in Photogrammetry. Also, after generating certain products in this projects (Digital Surface Model, Digital Terrain Model, orthophoto, digital topography maps, point cloud with texture etc.), these products can be used for practical work in courses such as Geographic Information Systems, Digital Terrain Modelling, Digital Image Processing, Project Work in Geoinformatics, Geoinformatics 1 and 2 and other.

Procurement of the remaining specific equipment for implementation of 3D digital photogrammetric workstation will be ended soon (3D mouse and 3D vision glasses for stereorestitution).

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