Ukrainian part of IGMASSproject: current state

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About IGMASS

International Global Monitoring Aerospace System

 An initiative of Russian scientific and public organizations to design a "system of systems" for effective early warning of international community about global risks and threats, including dangerous events of space origin

> The IGMASS Project is a Russian initiative actively promoted throughout past two years at the international level under the auspicious of IAA. The Project is aimed at creating special aerospace system intended for early warning of the international community about approaching natural and man-made disasters of the global scale, including threats of cosmic origin.



About IGMASS (cont')

- Objective
 - pursue global and effective forecast of potentially dangerous natural and man-caused disasters on the Earth and in outer space provided by integrated global aerospace monitoring resources





IGMASS Structure

- Space segment
 - Existing and future Earth observation satellites
 - Navigation

Aero segment

National airborne observations

Ground segment

Control

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- Communication
- Data processing

Cooperation with existing systems and initiatives

 UN, Charter, GEOSS, GMES/Copernicus, Sentinel Asia, ...





IGMASS Tasks

- Monitoring and forecasting of natural and technological disasters
- Natural Disasters
 - Floods
 - Earthquakes
 - Fires
 - Droughts
- Critical objects





поверхности



Ионосферные возмущения КОНТРОЛЬ РАСПРОСТРАНЕНИЯ

ВОЛН ЦУНАМИ

ОЦЕНКА ПОСЛЕДСТВИЙ СТИХИЙНЫХ БЕДСТВИЙ



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IGMASS Members and Partners



Ukrainian segment of IGMASS

- IGMASS is included as
 - Pilot Intergovernmental Innovative project (2014-2018) into Inter-governmental Program of Innovative Collaboration of CIS Countries until 2020
 - Countries:
 - Russia, Ukraine, Belarus, Kazakhstan
- Contract of the State Space Agency of Ukraine (2013)
 - Development of System Project for the Ukrainian Segment of IGMASS



Ukrainian segment of IGMASS (cont')

- Three main subsystems
 - Seismic activity monitoring and forecasting
 - Floods, fires and droughts monitoring and risk assessment
 - Control and monitoring of critical objects
- Access through geoportal

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- Interoperability with existing systems
 - CEOS/WGISS, GEO



Use cases: Seismic activity monitoring

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- Main Center for Specialized Control
 - A network of stations for seismic observations and geophysical phenomena monitoring

	ЖНВНЕ НОСМІЧНЕ АГЕНТ Офі Коснічні комплекси ⊽ Пусю	СТВО УНЛАЇНИ ційний веб-сайт українських РН ⊽	Підприємства 🗢 Пре	Дукція ⊽	
пошук ДКАУ Новини	Джерело землетрусу (позначене НКАУ за поплиоторо ріданици р	червоною крапкою на м	tani) виявлено <u>Головним</u>	Зем центром спеціального конт	проект "Циклон-4"
Діяльність	Дата	08.09.2013	Час (київський)	16:22:13	
Нормативна база	ы	45,6 пн.ш.	Довгота	22,9 с.д.	
Видання та мультимедіа	Магнітуда (за шкалою Ріхтера)	4,8	Район	Румунія	
Зв'язки з громадськістю та ЗМІ			Наслідків на	території України немає	and the second
					космічний проект «ЦИКЛОН-4» Останні новини >>> 12.09.2013: Відбувся візит в Україну делегації Китайської національної космічної адміністрації 10.09.2013: В ДКА України відбувся візит Виконавчого саматаль Вінстрацій
					Registration of seismic activities

Use cases: Flood monitoring and prediction

- UN-SPIDER RSO
- Center of the Special Information Receiving and Processing and the Navigating Field Control



Fig. 1. Fragment of EO-1/ALI image over the Kyiv area acquired on 17 March 2012. The image is presented in false color. Spatial resolution is 30 m. Data courtesy of the NASA Earth Observing One (EO-1) mission operated by the Goddard Space Flight Center.



in false color. Spatial resolution is 8 m. Data courtesy of the state space Agency of Okrame.

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Flood mapping for Cameroon, 2012

Use cases: Fires monitoring

- UN-SPIDER RSO
- Center of the Special Information Receiving and Processing and the Navigating Field Control
- Regional Eastern Europe Fire Monitoring Center



Active

fires

02 August 2010















Thank You!