

# 3D Media Internet

Petros Daras

Informatics & Telematics Institute, Thessaloniki,  
Greece

Project *VICTORY*

*Bled, Slovenia, 30 March - 2 April 2008*

**THE FUTURE OF THE INTERNET**  
Perspectives emerging from R&D in Europe



Slovensko predsedstvo EU 2008  
Slovenian Presidency of the EU 2008  
La Présidence slovène de l'UE 2008

[home](#) | [contact](#)

# UCM cluster goal

- Created and coordinated by the Networked Media Unit

## Aim

- To reflect the consolidated opinion of the UCM cluster composed of representatives of 15 ongoing FP6 & FP7 EU funded projects
- To identify and describe the challenges provisioned by the experts for the upcoming years, concerning the FMI, paying specific attention to its provisional 3D characteristics.

# UCM Cluster structure

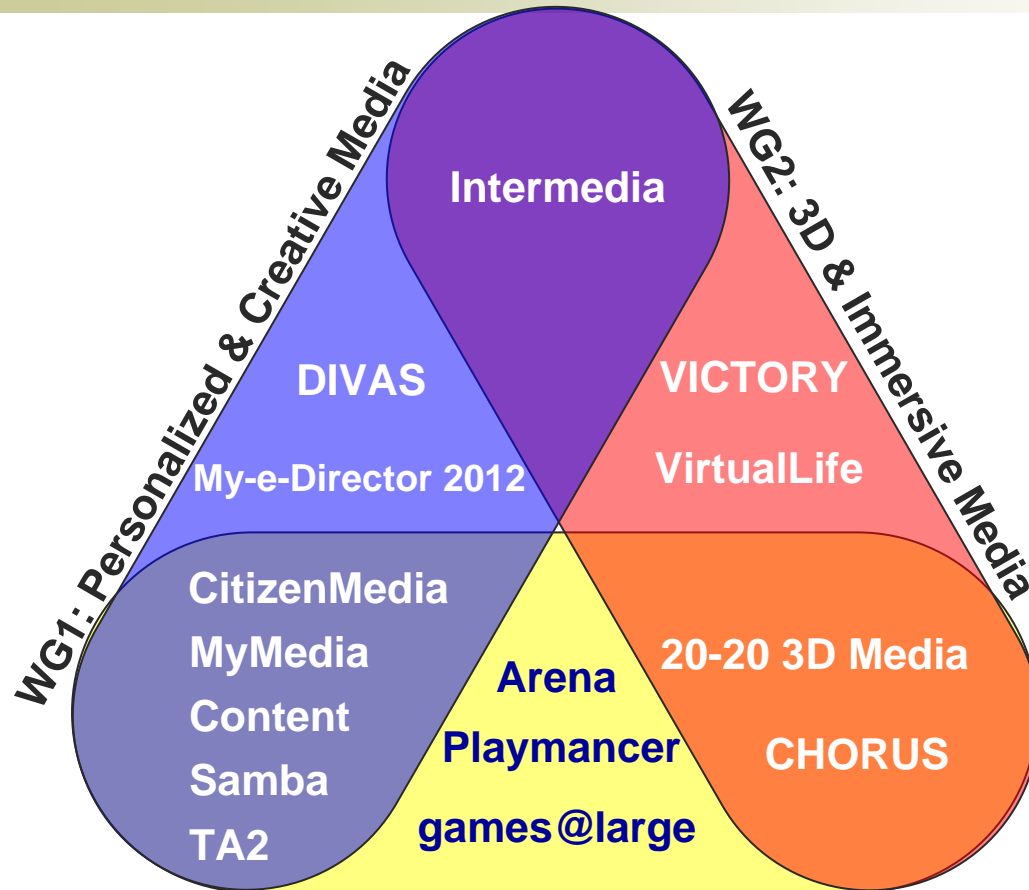
## Working Groups

- **WG1: Future Internet of Personalized & Creative Media**
- **WG2: Future Internet of 3D & Immersive Media**
- **WG3: Future Media Internet Communities**

## People

- Isidro Laso Ballesteros (EU-Leader)
- Petros Daras (ITI-UCM cluster Coordinator)
- Nick Achilleopoulos (Archetypon S.A. – WG1 Coordinator)
- Marianna Panebarco (Panebarco & C – WG2 Coordinator)
- Oscar Mayora (Create Net – WG3 Coordinator)

# UCM Cluster structure

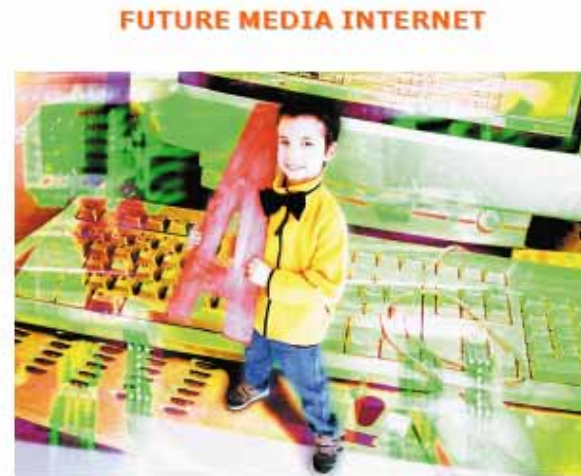


**THE FUTURE OF THE INTERNET**  
Perspectives emerging from R&D in Europe



Slovensko predsedstvo EU 2008  
Slovenian Presidency of the EU 2008  
La Présidence slovène de l'UE 2008

# UCM Cluster activities



Brussels, January 2008

[ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/netmedia/user-centric-media\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/netmedia/user-centric-media_en.pdf)

[ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/netmedia/20080101-fim\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/netmedia/20080101-fim_en.pdf)

**THE FUTURE OF THE INTERNET**  
Perspectives emerging from R&D in Europe



Slovensko predsedstvo EU 2008  
Slovenian Presidency of the EU 2008  
La Présidence slovène de l'UE 2008

home | contact

# FI of Personalized & Creative Media – Research Challenges

- **#01 – PERSONALIZATION**
  - New approaches to media containers that allow personalized creation and delivery;
  - Provide advanced forms of filtering and navigating through content;
- **#02 – ADAPTIVE MULTIMEDIA CONTENT**
  - Media should adapt to a form that suits the user at a given moment in time and independent of locations and device;
- **#03 – COLLABORATIVE AUTHORIZING**
  - New forms of Interfaces and technologies that allow for enhanced creativity, foster cooperation, sharing and reuse

# FI of Personalized & Creative Media – Research Challenges

- **#04 – CONTENT MOBILITY AND ACCESSIBILITY**
  - Provide people with the ability to transfer content from one device to another
  - Allow for a very efficient way of locating the desired information based on user preferences and user profiles
  
- **#05 – PRIVACY AND INTELLECTUAL PROPERTY PROTECTION**
  - User information should be treated according to easily understandable policies that users have easy access to. Trust mechanisms should exist, that allow users to verify that systems use their information according to the agreement.
  - Copyright protection and insurance of the content ownership are of significant importance in creating future user-centric repositories.

# FI of 3D & Immersive Media – Research Challenges

- **#01 – AVAILABILITY OF 3D IMMERSIVE APPLICATIONS EVERYWHERE AND AT ANY TIME**
  - Research for more efficient coding, streaming, broadcasting and visualization in different kind of terminals, algorithms are required
- **#02 – REAL TIME 3D NAVIGATION AND PHYSICAL AND EMOTIONAL INVOLVEMENT OF THE USER**
  - Applications able to support haptic and sensorial interaction and applications for virtual and augmented reality, available also in a nomadic situation (thanks to the use and increase of wireless broadband networks) and mobile 3D interaction

# FI of 3D & Immersive Media – Research Challenges

- **#03 – FROM 2D TO 3D CONTENT**
  - Improvement of the 3D capturing techniques;
  - New forms of transcoding real world and 2D media to 3D environments so as to allow for the use and reuse of traditional digital media in the new environments.
- **#04 – INNOVATIVE ORGANIZATION AND DISTRIBUTION OF THE 3D CONTENTS AND SERVICES**
  - Search & retrieval systems for complex 3D virtual distributed environments
  - Real-time multiparty networked 3D multimodal applications for professionals as well as communities and gaming to foster user enjoyment and experience
  - Research is required on media content-aware future networks to more efficiently set up distribution and processing mechanisms
  - Enhanced QoE

# Future Media Internet Communities– Research Challenges

- **#01 – DYNAMIC SERVICE PROVISION**
  - Enabling access to a range of different concurrent services, provided regardless of the user's location and be adapted to a user's needs;
  - New service architecture that recognizes the user, regardless of device and location, and is capable of provisioning a service to him
- **#02 – TRUST AND SECURITY**
  - Research should focus on reinforcing security against intrusion, on the management/utilization of the personal/community physical objects, on the privacy of the personal/community data and on the way trust between users and service providers is built and destroyed

# Future Media Internet Communities– Research Challenges

- #03 – DYNAMIC SERVICE CREATION
  - On methods and techniques required to elicit user requirements and to capture and interpret user behavior within new environments
  - On business models that will bridge the world of virtual and real things and that can support the negotiation and contractual agreement of capability between a service provider and the owner of a networked artifact.
  - On methods of search and discovery, in real-time, of an artifact's capabilities, location and availability.

# Common RTD Challenges

- Intelligence embedded into the content;
- True interactivity for all types of available terminal devices;
- Ubiquitous access to high-quality media content and content availability “anytime – anywhere”;
- Collaborative and shared environments for ease 3D content authoring from inexperienced users;
- Real-time 3D navigation combined with physical and emotional involvement of the user;
- Efficient mixing real with virtual (computer-generated) objects/scenes;
- Augmenting communities’ social experience by stimulating all users senses: visually, aurally (sound, smell) and haptically;
- Creation of bridges between real artifacts (internet of things), pervasively available media and virtual communities;
- Research on new formats and codecs to allow user-centric creation and manipulation of 3D multimodal media.
- Research on new network information manipulators and algorithms for an efficient 3D content search (including search in virtual worlds).

# European Economic Impact

- New interactive experiences integrating the real and virtual worlds will enable a complete new set of services and business models.
- Investments for implementation of services that could enhance their flexibility and interoperability
- Massive creation of immersive environments distributed towards Internet
- Content producers will continue to exist, but they will have to evolve in order to survive the epochal turning point of FI. Preferences and sensibility of the audience will change and content creators will have to intercept this new trend and modify their offers; cinema industry, for instance, will have to offer new experiences, much more immersive and interactive.
- The electronic industry should also adjust its services, launching on the market immersive 3D devices (such as haptic and virtual reality devices) with a good quality/price ratio

WG1: Personalized & Creative Media	WG2: 3D & Immersive Media	WG3: Future Media Internet Communities
DIVAS <i>Mick Achilleopoulos</i>	VirtualLife <i>Marianna Panebarco</i>	Samba <i>Oscar Mayora, Margarita Anastassova</i>
Infermedia <i>Nadia Magnenat-Thalmann</i>	VICTORY <i>Petros Daras</i>	Arena <i>Federico Alvarez</i>
Samba <i>Oscar Mayora, Margarita Anastassova</i>	InterMedia <i>Nadia Magnenat-Thalmann</i>	Playmancer <i>Elias Kalapanidas</i>
Content <i>Carmen Guerrero, Matevž Pogačnik</i>	20-20 3D Media <i>Eugenia Fuenmayor</i>	Content <i>Carmen Guerrero, Matevž Pogačnik</i>
CitizenMedia <i>Carmen MacWilliams, Petter Brandtzag</i>	CHORUS <i>Jean-Yves Le Moine</i>	CitizenMedia <i>Carmen MacWilliams, Petter Brandtzag</i>
MyMedia <i>Tim McGrath</i>		Mymedia <i>Tim McGrath</i>
TA2 <i>Peter Stollenmayer, Doug Williams</i>		TA2 <i>Peter Stollenmayer, Doug Williams</i>
My-e-Director 2012 <i>David Salama</i>		20-20 3D Media <i>Eugenia Fuenmayor</i>
		games@large <i>Alex Shari</i>
		CHORUS <i>Jean-Yves Le Moine</i>



## THE FUTURE OF THE INTERNET

Perspectives emerging from R&D in Europe



Slovensko predsedstvo EU 2008  
Slovenian Presidency of the EU 2008  
La Présidence slovène de l'UE 2008

# Thank you!

- For further information please contact:  
[daras@iti.gr](mailto:daras@iti.gr)
- The UCM position paper can be found at:
- [http://cordis.europa.eu/fp7/ict/netmedia/publications\\_en.html](http://cordis.europa.eu/fp7/ict/netmedia/publications_en.html)
- <http://www.victory-eu.org>