



Elements for the H2020 programme (2018 and beyond)

Following the update of the NEM Strategic Research and Innovation Agenda (SRIA) in 2016, it has been decided to extract the most important research domains and objectives that have to be pushed in the next WP2018-2020, completely in line with the priorities elaborated in April 2016.

The NEM ETP members are supporting the following list of priorities:

1. Content distribution (chapter 3, chapter 6)
2. Hyper-personalization (chapter 1, chapter 5)
3. Immersivity (chapter 7)
4. Media analytics (chapter 4)
5. Professional media workflow (Chapter 2, Chapter 9)
6. Secure and trustable content - Block chain (Chapter 8)

The first topics should focus on technical/technological trends rather than following market trends. Anyway, if they are shared by several of previously identified trends (SRIA v04), we are boosting the potential impact and providing a better overview of the NEM community.

Content distribution can integrate all the new trends on the evolution of networks and the provisioning of media services. These include the increased capacity of the actual networks, the potential impact of 5G networks for new business models, the increasingly convergence of “hybrid” services built upon the combination of different networks. The convergence between broadcast, multicast and unicast as well as the potential of SDN networks should be a tremendous opportunity for the media and content industry.

Hyper-personalization will consider the different aspects of maximizing opportunities to customize content to consistently target the right audience throughout the customer lifecycle. Thus it will create meaningful connections and drive engagement among audience. It can be applied to most of the media markets we have compiled. It also encompasses the ATAWAD (anytime, anywhere, any device) concept which provide to the end user the best format according to the device used.

Immersivity should take advantage of all the great work done for the I2C PPP proposal. It is very likely to be one of key drivers of media in the upcoming years to reshape the way contents and services are provided and the user interaction is completely renewed. There are a lot of technical topics along the value chain involved, so it can integrate many NEM actors as well. It should encompass the following activities already described in the I²C PPP



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proposal: Storytelling Creation for I2C, Mixed Content Immersive Technology, Content Generation Tools for I2C, Science, Technology and Arts in Immersive and Interactive Media.

Media analytics will cover the media analytics tools for Big Data and Social Media, positioning media as a core sector for Big Data technologies including the social media. It will also address media search engines which is a potential open field for the European industry. It will contribute to the Hyper-personalisation objective but also to any services which need data extraction.

Professional media workflow to address migration, virtualization, co-creation,... aligned with production core technologies. Digital cinema as well as professional content provider workflows have to deeply evaluate new technologies in order to take advantage of them but also to fit the end-user needs who expect more and more personalised content. As a consequence, the producing environment has to be rethought as well as all the tools used by professional content providers.

Secure and trustable content - Block chain seems to be promising for DRM and micro payment between users according to recent experiences and publications. This new technology is still very new but seems to have the potential to fix issues that we have not yet solved. A consistent DRM is still expected from end users and for content providers, and as block chain technology is a contract between two entities without any central point, it seems very promising. In the same way, users are increasingly used to creating content with their mobile and are also interested in selling it, micropayment is the solution and the block chain technology could facilitate one to one payment.



NEM Priority list ranking

Output from the April 2016 survey among NEM members

Foreword

This document provides a first draft list of priorities for the research funding programs WP2018 and beyond in Horizon2020.

Methodology:

To come up with this document, NEM community analyzed the NEM SRIA of 2014, compared it with current and future call programs of Horizon2020 and identified new challenges via a qualitative survey amongst NEM members by mid-February 2016. These topics were listed in a survey comprising 109 topics grouped in 23 chapters which was distributed amongst NEM members, following the NEM General Assembly in mid-March. 37 NEM members took part, each had 5 points to distribute amongst the overall 109 topics (for the outcome of this survey please see the excel list attached). The priorities that were voted for most constitute this NEM priority list ranking: The NEM editing group has selected the topic chapters which got more than 4 points, 16 of them are listed below in document.

The editing group proposed also to merge the following chapters together:

- Emotional monitoring, user behavior & Interaction
- Open & Big Data + data analytics

List of the most important topics

Transversal aspects:

Two transversal aspects of future research funding programmes were stressed by the participants of the survey:

1. **A more dedicated focus on societal challenges**, i.e. the cultural, societal and political aspects of the creative sector, and how ICT can support progress in this field (e.g. Big Data analytics vs. privacy, User Generated Content)
2. **A more dedicated focus on the different creative sectors and their potential synergies**: fashion, film, design, publishing, broadcasting and games all have their own, specific innovation strategies, and also areas where these overlap - yet project calls do not yet focus on different creative sectors, but on the creative industries as a whole - which does not reflect reality (yet).



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The editing group would also like to point out that several other transversal aspects were not part of the survey yet, but should be taken even more into consideration in future programs. This concerns especially:

- a stronger focus on market-uptake in the overall concept of H2020 programs, including: legal aspects, market research & testing, business modeling, sustainability etc.
- a stronger focus on international cooperation
- a stronger focus on accessibility (which can be seen as part of the societal challenges)

The editing group also stressed the interest in applying these technologies to any media & content sectors such as Digital cinema, Book publishing, design, fashion, music, ... through large pilots which could show and validate the relevance of the solutions.

Technological aspects:

Chapter 1 (5+18¹): Emotional monitoring, user behavior + Interaction

1.1 - Natural Human Machine interaction & Value added contents - Augmented and virtual reality experience on advanced devices (glasses, windscreen, TV, mobile, 3D/holographic content and displays, haptic rendering brain-computer interfaces, physiological computing, wearables)

1.2 - Adaptive and personalized storytelling - collective memory and heritage built on-the-fly combining different content formats

1.3 - New ways of interaction in complex working environments (eg natural walking interfaces, and whole-body involvement in VR, collaborative interaction in VR)

Chapter 2 (1²): Creation and Authoring of Audio/Visual Content

2.1 - Immersive Content formats for both video and audio

2.2 - Media-centric IoT – applied to the capture of user-generated content – the prosumer and social networks and in the professional environment of object-based media

2.3 - Media orchestration – (tools for) managing multiple, heterogeneous devices over multiple, heterogeneous networks, to create interactive and immersive experiences.

4.2 - Digital geometry processing: (tools for denoising), consolidation, registration, reconstruction, classification, matching, parameterization

Chapter 3 (20): Media convergence

3.1 - Internet of things

3.2 - Augmented Reality

¹ in the original excel sheet: chapters 5 & 18

² in the original excel sheet: chapter 1



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Chapter 4 (6&13³): Open & Big Data + Data analytics

4.1 - Media and Usage Data analytics in order to propose better services, such as hyper-personalization and recommendation.

Chapter 5 (7⁴): User personalisation, individual experience, service innovation

5.1 - Contextualization to take personalization a step further by adding situation, predictive, and real-time elements to existing tenets of personalization

Chapter 6 (17⁵): Content delivery

6.1 - Anytime, Anywhere, Any Device (ATAWAD)

Chapter 7 (10⁶): New formats

7.1 - 3D Virtual/augmented reality using new devices (glasses, 3D Screen, windscreen display,...)

Chapter 8 (16⁷): Secure and trustable content

8.1 - Digital Rights Management and content protection, in particular, with the development of user-friendly systems that offer protection without hampering the user experience while at the same time communicating clearly all the relevant information

Automated expression of rights (digital rights information management), machine-readable, in order to facilitate identification, negotiations and transactions concerning protected digital works

8.2 - Digital Rights Management (DRM) interoperability across value chain (or standard solution)

Chapter 9 (8⁸): Storage, cloud

9.1 - Use of the cloud for the production and distribution of media, both between businesses and to the end user

³ in the excel sheet: chapter 6 & 13

⁴ in the excel sheet: chapter 7

⁵ in the excel sheet: chapter 17

⁶ in the excel sheet: chapter 10

⁷ in the excel sheet: chapter 16

⁸ in the excel sheet: chapter 8



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In addition, NEM would like to put forward as one of the priorities of future H2020 programs a concept which was originally devised to form a future **I²C Public Private Partnership (PPP)**, and which NEM would like to pursue in the form of an **I²C initiative dedicated to Immersive and Interactive Content**.

Chapter 10: Focus Program to I²C initiative

Activity 1 - Storytelling Creation for I2C

Activity 2 - Mixed content Immersive Technology

Activity 3 - Content Generation Tools for I2C

Activity 4 - Science, technology and arts in Immersive and Interactive Media

Activity 5 - Direct Support to Startups and Microenterprises

Activity 6 - Support to Intermediary Organizations