EBU
OPERATING EUROVISION AND EURORADIO

MDN WORKSHOP 2016

TUESDAY 7 JUNE

09:15	*Registration & coffee*	

9:45 – 10.30	**"Sparql as Reporting Tool"**	**Robert Engels - NRK**

10:30 – 11.15	**NRK Origo, Practical CCDM and EBUCore**

NRK Origo project is a total reorganisation of the radio- and television infrastructure in NRK. Powered by a common self-developed metadata layer using the CCDM and EBUCore standards, third party products will be integrated to build the total infrastructure. The metadata layer will get inputs every stage of the production face from planning to play-out, and will be the real integration layer in the infrastructure, keeping the loss of metadata to its minimum. In addition semantic technology will be used to link additional data sources. One of the goals with Origo is to make publishing to the web first as easy as to traditionally play out content on TV, making Norway's largest broadcaster becoming a publishing house. The project is now in it first year and the presentation will give an overview over the architecture and metadata structure that powers the project.

Tormor Værvågen (NRK), Educated as an audio- and video engineer at Gjøvik University College in 1989 Tormod worked in radio production as recording and balancing engineer until the end of 1999. From 2000 he has developed services for mobile devices and web in NRK, including the invention of the gluon system integration tool, development of metadata and xml services.

From 2010 he has been working as systems architect. He is a member of MIM-MM, active in the work on the EBUCore, and is now chair of MIM-MDN (Metadata developer network). He does similar work in the Audio Engineering Society on both audio and metadata.

11:15 – 11:45	*Tea, coffee*	

11:45 – 12:30	**Content and Metadata Workflow for UGC in Live Production**

Coverage of sports and music events can be improved by inclusion of user generated content (UGC), which provides additional angles otherwise not covered by the production team. Recently, apps for live streaming for UGC have emerged, but the integration of the content into a live production is still challenging. Also, content needs to be filtered automatically in order to only suggest a few streams to the editor. This filtering is based on a broad range of metadata, including for example location and quality of the content. Some of the metadata is available from sensors of mobile devices and needs to be streamed to the production system, while other metadata is extracted from the content. Another important type of information are time stamps of all content and metadata, in order to ensure synchronization in such a challenging scenario.

We present a system consisting of a capture app, which streams both content and metadata into a processing system that performs automatic metadata extraction in real-time. Metadata are available as a stream for live consumption and are indexed in a metadata store. Based on the metadata, the available UGC streams are filtered, so that the selected streams can fed into an editing system.

Werner Bailer (Joanneum Research) is a key researcher of the audiovisual media group at the Digital - Institute of Information and Communication Technologies at JOANNEUM RESEARCH in Graz, Austria. He received a degree in Media Technology and Design in 2002 for his diploma thesis on motion estimation and segmentation for film/video standards conversion. His research interests include digital film restoration, audiovisual content analysis and retrieval as well as multimedia metadata. He is contributing to multimedia standardization activities in the W3C, MPEG and EBU/AMWA FIMS.

12:30 – 13:30	*Lunch*	

13:30 – 14:15	**Data Driven Journalism**

Data – Driven Journalism is the art of making up newsworthy stories by analysing and extracting sense from data. Many efforts have been spent worldwide in this area, leading to several noteworthy success cases. This speech will illustrate some insights about RAI's approach at the matter, with specific emphasis on automated data gathering and analysis tools, reference components and system integration aspects, data models, and the role of semantic data.

Dr Alberto Messina (MSc Electronic Engineering, PhD) works for RAI Centre for Research and Technological Innovation, where he leads the research area concerning automated analysis and management of multimedia information. In this area he and his team count more than 80 among technical and scientific publications. He chairs the EBU Strategic Programme on Media Information Management (SP/MIM) about metadata and Service Oriented Architectures. Since 2004 he has been working with leading roles in several EC projects among which the IBC 2013 Special Award winner

14:15 – 14:45	**BRIDGET**	**Miroslaw Bober – University of Surrey**

14:45 – 15:15	**Tagging Content at the Finnish Broadcasting Company YLE**

Yle has developed a series of content description processes and established a "Yle-vocabulary" to semantically tag all Yle content - articles, images, tv and radio programmes - in a common, consistent and language independent way.

The presentation will give an overview of this development and how the tags are used for recommendation, personalization, navigation, internal search and automatic linking of content on the web and in applications.

Yle uses external vocabularies as primary sources for concepts; those vocabularies, especially Wikidata which was recently implemented, and e.g. challenges with partially overlapping vocabularies are discussed. The tags are produced both manually and automatically. In all content description. Yle is aiming at computer-assisted processes; the progress in automatic metadata production at Yle will also be briefly discussed.

Pia Virtanen works as producer at the Finnish Broadcasting Company Yle, currently at Yle Internet Media, developing methods and practises of describing content, especially tagging practises to be uniform throughout Yle. This includes leading the development of one of Yle's APIs, Meta-API: an API offered for tagging content in different systems at Yle. The content of Meta-API makes up a "Yle-vocabulary", which requires constant qualitative maintenance (e.g. mapping). She also instructs and supports journalists in their tagging processes. This year she also works actively to pilot computer-assisted processes in content description (speech and image recognition, automatic indexing etc.). Pia Virtanen is a trained translator and information specialist / librarian and working since 2005 at Yle (earlier in Library & Information Services, Yle Archives and Yle Factual).

15:15 – 15:45	*Tea, coffee*

15:45 – 16:30	**New rights management system of RAI and its use of MPEG-21 Media Contract Ontology**

In 2015 we presented the kick off of RAI project implementation of a new rights management system using MPEG-21 Media Contract Ontology (MCO).
This year we can show the first achievements. Early users are already inserting rights statements from real new and legacy contracts.
Key rights patterns are defined by power users to ensure compliance with indications from RAI legal departments. More complex but recurrent patterns can also be defined for reuse as templates. RAI decided not to use MCO for expressing the whole contract in electronic form, but only the rights (permissions) and some obligations. The basis is MCO 2nd edition, formally approved in February (publication pending), however we defined a number of additional entities in order to fulfil the requirements of our legal department.
Although some features of the new system will be completed and deployed later this year, a demonstration of what is in place is going to be given via VPN.

Laurent Boch has been working for RAI – Radiotelevisione Italiana since 1992, at the Centre for Research and Technological Innovation (CRIT) of Turin.
His latest main activities have been in the area of digital preservation of audiovisual contents.
This included various EU funded projects, such as PrestoPRIME (2012) and Presto4U (2014) and the contribution to MPEG-21 standardization works (CEL and MCO). He is currently the technical coordinator of RAI Master Digitisation Project and member, together with Annarita Di Carlo and Monica Perrone, of the team responsible for the RAI new rights management system.

16:30 – 17:00	**Opportunities for big data in media and data project at VRT**

Big Data is a buzzword with many definitions. What is a trend however in many industries is the move to more data-driven business processes: the transition to a data-driven economy. This presentation will have 2 parts. First of all, we will provide an overview of which and how media production processes become more data-driven. Furthermore, we will introduce the data project that has recently started, which aims at making several of the media business processes at VRT more data-driven.

Dr. Paul-Armand Verhaegen holds a PhD in the domains of data mining and systematic innovation, a master degree in applied science and engineering - specialisation electrotechnical and computer science - a graduate in the complementary studies in business administration, and an MBA from the Vrije Universiteit Brussel. He has founded and sold Stocks, a company specialising in printer supplies. He has worked as an external consultant for 3E on green energy certificates, as a consultant at Bureau van Dijk Management Consultants, and as a researcher and assistant at the Vrije Universiteit Brussel, the Erasmushogeschool Brussel and the KU Leuven. He's currently working as a data scientist at VRT and is responsible for designing VRT's data architecture.

WEDNESDAY 8 JUNE

09:15 – 10:00	**Sport Metadata Workflows – from Ingest to Visualisation**

The presentation will go through a representative sport metadata workflow from data capture to data visualisation. Data can be delivered in different formats from different sources and is transformed into semantic data using the EBUSport ontology. Data is then queried for use in various applications and for data visualisation. Different sparql query strategies will be addressed as well as different ways to interact with a triple store. The different formats in which query results can be exported will also be discussed.

Jean-Pierre Evain joined the EBU's Technical Department in 1992 to work on "New Systems and Services" after several years spent in the R&D laboratories of France-Telecom (CCETT) and Deutsche Telekom. He is now looking after "Media Fundamentals and Production Technologies" and coordinates all EBU technical activities concerning metadata and new production architectures. He is the co-author of several EBU metadata specifications. He is actively promoting the use of semantic web technologies in broadcasting. He is the Project Manager of the joint AMWA-EBU FIMS Project on Service Oriented Architecture. He represents EBU in many standard groups and industry forums like AES, ETSI, IPTC, MPEG, SMPTE, UK-DPP, W3C, among several others.

10:00 – 10:45	**A Study about the Organisation of Video Contents Based on the Educational Curriculum**

NHK STRL has developed a curriculum ontology which establishes the relation between brush-up / preparation work and items of study. The connections between each item in the ontology are generated based on their new or existing natural words utilizing the order of items of the curriculum as published by the Ministry of Education. This ontology enables us to find the path of study based on specific terms and to make videos aligned with each respective study path. In summary, this work provides a way of constructing/enriching a ontology and structuring video contents.

Makoto Urakawa (NHK STRL) studied image processing and earned the master degree of Information Technology in Yokohama National University.

He joined NHK (Japan Broadcasting Corporation), which is the sole public broadcaster in Japan, after graduating from the college in 2005. He worked as an operation engineer of production, playout, and terrestrial broadcasting for the first 5 years. After that, he was in charge of management of developing systems for broadcasting and internet services for 5 years. Now he's been studying about the way of apply the semantic technology to the broadcasting at NHK's Science and Technology Research Laboratories for 2 years.

10:45 – 11:15	*Tea, coffee,*

11:15 – 12:00	**Semantic Fingerprinting**

Shooting video has never been cheaper, due to consumerisation of camera gear and due to file-based workflows. This results in a massive increase of available material and the cost of logging and annotation is more and more an important factor on the budget. Limecraft has developed a patent-pending system that partially automates the logging process to a large extent. It enables producers to cut 33% of the offline-edit budget, it dramatically reduces the effort of archive intake and it increases the chances for re-use. During this presentation, Maarten and Thibaud will explain in detail how natural language processing and semantic fingerprinting are employed to uniquely identify fragments of audio-visual material and to enable automated post-production and archiving.

Maarten Verwaest is founder and CEO of Limecraft, dedicated to giving media professionals the best possible solution to manage their digital workflows. Prior to this, in his capacity as a programme manager for the R&D department of VRT (VRT-medialab), he was responsible for several innovative technologies to enable computer assisted manufacturing and automatic indexing of audiovisual media. These experiences eventually led to the incorporation of Limecraft and its unique selling proposition.

Author of several distinguished publications and often invited as a speaker to conferences, Maarten is an acknowledged subject matter expert on a range of topics including multimedia techniques, semantic technologies and media production infrastructure. Relying on his critical appreciation of current and future trends, and capitalising on his extensive experience as a systems architect, he strives to move media technology beyond the state of the art.

Thibaud Baudoncq graduated in 2015 as a Master of Science in Industrial Engineering and he is an expert in automation processes. SInce his

		graduation, Thibaud worked as application engineer for Limecraft. At Limecraft, Thibaud lead the development of innovative methods for automatic identification of audiovisual material, some of which have been submitted for patent protection. The technologies developed by Thibaud have been incorporated in Limecraft Flow.

12:00 – 12:45	**New Language Technology Tools** BBC News Labs has just launched a second pilot to test new language technology tools in Russian and Japanese. The experiment combines computer-assisted translation (Google Translate) and text to speech voice synthesis to translate news videos. The presentation will report on preliminary results.	**Susanne Weber is the Language Technology Producer at BBC News Labs, London, U.K.** She leads a team of developers and editors to design the innovative production tool ALTO which incorporates computer-assisted translation and TTS voice synthesis. The audience-facing pilot launched in 2015 and is now available online on BBC News Japanese and BBC Russian. Susanne is also the BBC's project lead for the H2020 EU funded project SUMMA. In SUMMA, a Big Data project, three European news broadcasters BBC, Deutsche Welle, and Latvian news agency LETA are joining the forces with the University of Edinburgh and other research groups to develop a media monitoring platform. It will include automatic speech recognition and machine translation across nine languages. Susanne graduated in English & America Studies at Johann-Wolfgang-Goethe University, Frankfurt, Germany. In 2001, Susanne completed her training as Studio Manager at the BBC and worked as sound engineer in BBC World Service radio and television until 2015.

12:45 – 13:45	*Lunch*	

13:45 – 14:30	**YLE's metadata in 2020 – How to Answer future Unknown Needs** Online publishing requires more metadata about the content than traditional broadcasting. However, identifying the most valuable metadata is difficult due to rapidly changing business and customers needs. Due to limited resources, only the most valuable metadata elements can be produced. Also implementing metadata changes to existing systems and processes tend to be slow due to complicated architectures and human organizations. We propose an agile, just in time approach for identifying and addressing metadata needs in a media company. The individual content producers around the company should be creating the data that is most valuable at the moment - and when the needs changes, the data creation should be changed immediately. In addition to metadata, we also discuss the need for optimizing content for online use and the consequences for metadata creation.	**Kim Viljanen** works as a concept designer at the Finnish broadcasting company Yle where he develops (meta)data oriented solutions for the whole company and especially to improve the findability, visibility and engagement of Yle's television, radio and web content for the audience. Kim has also actively been involved in developing Yle's APIs, the archive service (Yle Living Archives), Yle's front page (yle.fi) and the ondemand audio and TV service (Yle Areena). Before joining Yle, Kim researched linked data and semantic web technologies at Aalto University and University of Helsinki.

14:30 – 15:00	**The "WITH" Platform – Facilitating Creative Re-use in the Cultural Heritage Domain** The presentation will introduce the "WITH" platform available for cultural institutions, professional users and third party developers to search for cultural resources in particular to promote innovation and demonstrate the social and economic value of cultural content. The platform is used to aggregate content from multiple sources, curate and annotate collections, as well as facilitate interoperability across data models and standards using the services of NTUA's MINT tool.	**Dr Vassilis Tzouvaras** received the B-Eng in the Dept. of Electronic & Systems Engineering of Essex University, the M-Eng in the Dept. of Automatic Control & Systems Engineering of Sheffield University in UK, and the Ph.D. in the EECE Dept. of NTUA in the field of knowledge technologies. He is active in the Europeana developments and many related projects (Athena, Euscreen, Europeana Sounds, Europeana Food and Drink,); He is leading the development of the MINT and WITH platforms

	An example will be presented using EUSCreen video archive material.	
15:00 – 15:30	*Tea, coffee*	

15:30 – 16:00	**How to Datify Media Content to Win Friends and Influence People: Your Next Metadata Strategy** The advice from Dale Carnegie from his 1936 seminal book *How to Win Friends and Influence People* has never been more relevant than today as evidence-based decision making has shifted the spotlight to the customer. Metadata models/ schemas (EBU) and media ontologies (CCDM) were primarily designed to standardise and streamline production but when the media product(s) were completed, so was the metadata. In today's omni-channel multi-streaming media ecosystem, market drivers have inspired many businesses to rethink their traditional ways of working and adopt a more customer-centric approach. it's no longer enough to merely push content to the masses and hope for the best. From education, healthcare, and media, businesses are re-designing their backend systems and transforming their workflows to run data-to-insight methods that help target more personalised and extended offerings. Harnessing customer data will require new metadata extensions that go beyond production efficiencies to include behaviours *around* the content or products. In this session, temporal metadata, storyline metadata, social activity, and ratings data will be explored to demonstrate how the closing of the "virtual metadata circle" will inform future investments.	**Madi Weland Solomon** is with the London office of Optimity Advisors as Senior Manager and brings over twenty years of knowledge and experience from a range of sectors. She is a creative technologist and specializes in business intelligence initiatives and semantic technologies that bridge the technical with social and cultural constructs. She has held executive roles in large multi-national companies and has initiated and led business transformation programs from the ground up. With the unique approach of combining soft skills with hard data, she has successfully introduced innovative products and new processes into operation. She is a TOGAF-9 certified Enterprise Architect, a CIPP/US Privacy Professional, former Co-Chair of the W3C Digital Publishing Working Group, former Board member of the EU Information Industry Network, current Editorial Board for the Journal of Digital Asset Management and Co Chair of the W3C Open Linked Education Data Community Group. She holds a BFA from Boston University.
16:00 – 16:30	**FIMS – A View from the Trenches** An analysis on a strategy to map a 'naive' domain model ("mine") to the FIMS model. How does a developer perceive the FIMS proposition and what should be done to facilitate adoption?	Sean O'Halpin - EBU/BBC
16:30 – 17:00	**Memoways Comet** Comet connects a video to a stream of video fragments. On one hand, you have an edited movie, telling a story in a closed and linear form. On the other hand, you have a stream of video fragments, giving access to additional information in an open and dynamic way. The head of the Comet is the edited movie, while the trail is the stream of video fragments. The use of the video player is very simple: watch a video, select interesting topics just by clicking on keywords that will dynamically appear under the video and create a personal playlist of additional content, you can then remix and share	Ulrich Fischer - MemowaysComing from the creative field (cinema & video), Ulrich Fischer always has been working as an entrepreneur: building up his own projects, financing them and bringing the results to the public. He founded a video production & postproduction company (C-Side Productions http://c-sideprod.ch) in 2007. Starting with 5 people: 5 years later the company counts 12 professionals, with a growing income. In 2011, he founded the Startup Memoways http://memoways.com after leading a research project "Walking the Edit" (http://walking-the-edit.net/en/). Memoways is now his main activity as the CEO of the company. Diploma at the ESAV (actual HEAD Geneva) in 2000 (Film & Video). Teaches in various art schools. Audio-visual & new media expert for festivals, cultural institutions and schools.
17:00 – 17:30	**Wrap-up and conclusions**	Tormod Vaervagen, MIM-MDN Chair - NRK