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Cyber performance, new experiences on technical and artistic collaboration across internet

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CESNET is a research organization with research focused on networking and Internet applications including video processing. CESNET also plays a role of the National Research and Educational Network in the Czech Republic providing e-infrastructure (high-speed network, computing services and data storage facilities) to academic users in the country. The CESNET network is a part of the pan European network GEANT, which connects all academic networks in Europe and provides many links to Asia, Africa, South America and the US. It creates an ideal environment for collaboration in many directions of science, medicine and culture. Over the years CESNET has developed two technologies that allow transmission of HD and UHD videos over a network - Ultra Grid as a software-based solution and MVTP as hardware-accelerated FPGA-based solution. Both technologies are widely used as technological tools in the events which needs high quality and low latency video. In the last several years we organized together with several partners (Music and Dance Faculty of the Academy of Performing Arts in Prague, Konic Theatre Barcelona, New World Symphony Miami), KISTI Korea, RDAM Royal Danish Academy of Music and APAN - Cultural Work Group several Cyber Performances (CP) as joint events in which participated artists from many countries. The main goal of such CPs is to demonstrate capability of the current Internet to arrange live collaboration and on-line interactions of performing artists (musicians, dancers, animators) across countries and continents using modern multimedia tools. These CPs are not simple and cheap, they need long time planning and preparation, and finally narrow collaboration of many people from different fields (artists, technicians, networkers). This is a reason why they are usually organized only in the frame of very important IT globally significant events such as Supercomputing, APAN or Internet2 meetings, TNC conferences, Cinegrid workshops, GLIF meetings, etc. From the past, we can remind successful CP "Dancing Beyond Time" on 36th APAN in Daejeon, South Korea and CP "Dancing in Space" on 37th APAN meeting in Taiwan or "Walking in historical Prague" on Internet2 Meeting in Honolulu, USA. The Network Performing Arts Production Workshop (NPAPWS) is an event connecting the creators, artists and technicians working in this field from around the world to present their projects and discuss ways to proceed in this area. CESNET has participated in several previous NPAPW workshops, with a distributed concert "Piano and Violin" in London 2015 and "Organs and Trumpet" in Miami 2016. Our current colleagues Ian Biscoe and Jana Bitter presented on NPAPWS 2016 an outdoor CP "Bridge to Everyone". In this conference CGA2017, we will describe our experiences from the last CP prepared for NPAPW 2017 in Copenhagen called "Similarities". The story of the performance is the following: Performers are the guides on the journey through their locations. Dancers guide the audience through their location via movement, which is directly interacting with and interpreting various features of their respective location (shapes, forms, colors, structures of the place). Musicians are providing a unifying soundtrack for both dancers and ideally, also musically react on the dancers' movements. The guided journeys (local performances) are captured on video, and the eye of the camera provides the progression of the resulting performance; a real-time-made film for Copenhagen. As the eye of the camera is selective, it reveals the location to the audience only gradually. The journey goes from the micro world of details and very close-up video through to the full image of each location. In the beginning, the detailed shapes and forms of each location seem to be very similar without being specific to one location, and then as the camera zooms out during the performance, the viewer begins to recognize more and more the specificity of the location. Performers communicate with other locations and performers (because they can see video from the other locations) by searching similarities, similar shapes, structures or forms. Teams from CZ, US, ES and DK jointly participated in this event. The team included network engineers and researchers, audio-visual technicians, programmers, musicians, dancers, scene designers and choreographers, with some people spanning multiple areas.

Biography

Jiri Navrátil received his PhD in Computer Science from Czech Technical University at Prague in 1984. He worked for 30 years at Computing and Information Center of CTU in various positions linked with High Performance Computing and Communications. During his several sabbatical leaves, he has worked in Switzerland, Japan and USA in the field of networking. Since 2006 he started working for CESNET - Czech Education a scientific Network as Leader of group supporting special research applications using high speed Internet. In last years, he participated on several multimedia performances organized in frame of large international cooperation in different fields.

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