

Computer Graphics & Animation 2017: Cyber performance, new experiences on technical and artistic collaboration across the internet – Jiri Navrátil – CESNET, Czech Republic

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CESNET is that the research organization with a search hub on networking and Internet applications including video processing. The CESNET also plays the important and emerging role of the National Research and academic Network within the Czech Republic country to providing e-infrastructure (in the sector of computing services, high-speed network, and data storage facilities) to academic and a few industrial users within the country. The CESNET networks are a neighborhood of the pan-European network program GEANT, which connecting academic networks within the European region, and provides many connecting links to Asia, South America, Africa, and therefore the USA. It creates a generic environment for collaboration in many directions of science, culture, and medicine. After several years of research, CESNET has developed O2 technologies that allow transmission of the HD and UHD videos over a network - Ultra Grid as a software-based solution service and MVTP as hardwareaccelerated FPGA-based solution service. Both technologies services are globally used as technological tools within the events or festivals which require top quality and low latency videos. within the last several years, we organized alongside several partners (Dance and Music Faculty of the Academy of Performing Arts in Prague, New World Symphony Miami, Konic Theatre Barcelona), KISTI Korea, RDAM Royal Danish Academy of Music and APAN - Cultural Work Group, and several Cyber Performances (CP) as joint events during which participated artists from many countries. the most goal of such CPs is to demonstrate the potential of the present internet to rearrange live collaboration and on-line interactions of performing artists (animators, musicians, dancers) across countries and continents using modern multimedia tools.

These CPs aren't simple and cheap, they have while planning and preparation, and eventually narrow collaboration of the many people from different fields (artists, technicians, networkers). this is often a reason why they're usually organized only within the frame of vital IT globally significant events like Supercomputing, APAN or Internet2 meetings, TNC conferences, Cinegrid workshops, GLIF meetings, etc. From the past, we will 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 occasion connecting the creators, artists, and technicians working during this field from around the world to present their projects and discuss ways to proceed during 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 Briscoe and Jana Bitter presented on NPAPWS 2016 an outside CP "Bridge to Everyone". In this conference CGA2017 Berlin, Germany, we'll describe our experiences from the last CP prepared for NPAPW 2017 in Copenhagen called "Similarities". The story of the performance is that 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 locations (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 therefore the eye of the camera provides the progression of the resulting performance; a real-time-made film for Copenhagen. because the eye of the camera is selective, it reveals the situation to the audience only gradually. The journey goes from the micro-world of details and nearly close-up video through to the complete image of every location. within the beginning, the detailed shapes and sorts of each location seem to be very similar without being specific to at least one location, then because the camera zooms out during the performance, the viewer begins to acknowledge more and more the specificity of the situation. Performers communicate with other locations and performers (because they will see videos from the opposite locations) by searching similarities, similar shapes, structures, or forms. The teams from the USA, DK, ES, and CZ jointly participated during this event. The team included researchers and network engineers, audio-visual technicians, musicians, programmers, choreographers, dancers, and scene designers, with some people spanning multiple areas.