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## Clinical trials and evaluation of cardiac ultrasonography over 4G Wireless network using a teleoperated robot

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A wearable tele-echography robot (MELODY) with four degrees-of-freedom that permits a medical expert to examine at a distance a patient by ultrasound was evaluated and tested over 4G mobile networks. At the expert side, the medical expert uses a dummy probe to control the real probe which is controlled by the robotic arms at the patient side and positioned on the patient's body by paramedic personnel. The communication between the two sites is facilitated by a videoconferencing link. The telerobotic system has now been clinically tested and commercialized. The experimental setup of the MELODY system over a 4G connectivity link used to measure the system performance is described. The evaluation and investigation of the relevant medical ultrasound video and the relevant issues defined in terms of the average throughput and jitter delay are investigated. A comprehensive video coding standards comparison for cardiac ultrasound applications is performed, including H.264/AVC and HEVC using a data set of nine cardiac ultrasound videos. Both objective and subjective (clinical) video quality assessment were performed.

### Biography

Sotiris Avgousti is Instructor in Nursing Department of School of Health Sciences at Cyprus University of Technology. He completed his Graduation at Higher Technical Institute, Department of Electrical Engineering and Master's degree in Data Communications and Computer Networks at Brunel University, UK. He worked for a number of years in the private sector in the field of Informatics and for 10 years as Electrical/Electronic Engineering Instructor at Higher Technical Institute. He specializes in the field of Computer Networks and Data Communications. His research interests focus on the field of Tele-Medicine and Medical Data Communications.

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