

HIPERMED – The high-performance low-cost telemedicine platform



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HIPERMED (High PERFORMANCE low cost teleMEDicine platform) was the first CELTIC cross-domain project including partners from both ICT and e-health in all project stages from definition to validation. It has designed a common open high performance low cost telemedicine platform providing services over IP, and minimizing deployment costs by reusing in-home infrastructures. HIPERMED has a huge commercial potential. First real deployments of HIPERMED technology are happening. The HIPERMED project won the EUREKA Award in the Category 'Added Value' and is Finalist for the prestigious EUREKA Innovation Award.

Deployment and service cost reduction are the key factor to allow telemedicine at home and between regional and reference hospitals. The HIPERMED platform was implemented with a common methodology that allowed to generate 8 new products and to improve 8 existing products (see Figure 1). HIPERMED has been tested and validated in healthcare systems of five EUREKA countries (France, Poland, Spain, Sweden and Turkey).

Video quality assessment

HIPERMED has enabled the development of the PROMETEE living lab in Nancy, France, dedicated to subjective image/video quality assessment by medical experts. The impact of lossy video compression for medical usages has been estimated. Results have shown that low bandwidth remote consultation connections could be allowed while maintaining the quality of ear, nose & throat (ENT) videos for medical decision making by using compression techniques (AVC/H.264), reducing the video bitrate from 3Gbps to just 3Mbps. Finally, the video sequences (see figure 2) have been proposed to the MPEG standardization group to be included as

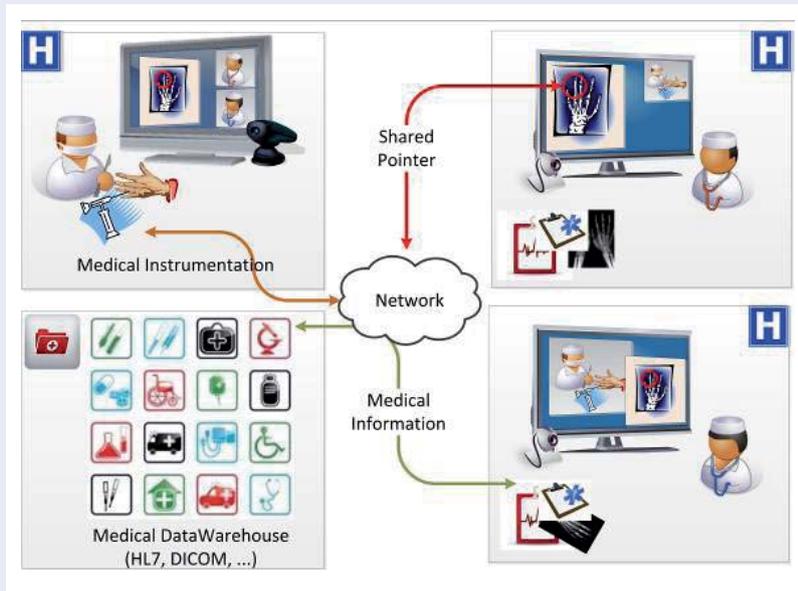


Figure 1: HIPERMED platform overview

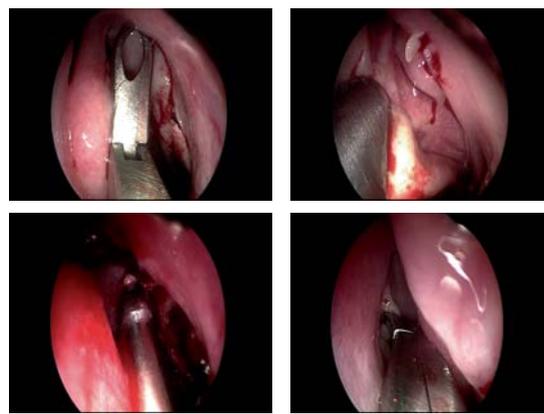


Figure 2: HIPERMED video test sequence

test sequences in the HEVC profile for screen content medical video.

Commercial deployments

- Sweden:** HIPERMED results are considered for deployment in the Swedish public sector.
- Turkey:** Turk Telecom is deploying HIPERMED Speech Therapy solutions connecting remote regions to regional hospitals, for example in Anatolia.
- Spain:** The Red Cross is deploying a professional-to-patient videoconferencing system, while several mutual occupational accidents insurance companies are deploying a remote consultation System between primary care and reference hospitals.
- France:** ENT Department of Nancy University Hospital is going to deploy HIPERMED Videocon-

ference solutions for learning purposes before possible massive deployment in other departments and hospitals of Lorraine Region. 30 elderly persons' homes and 2 hospitals in Paris are deploying HIPERMED Videoconference solutions for remote consultation.

Poland: Deploying HIPERMED remote consultation solutions in the Otolaryngology Department Clinical Hospital of the Poznan University of Medical Sciences before a possible massive deployment using the P-ONIER Network interconnecting all clinical hospitals in Poland.

Conclusion

HIPERMED has developed 16 medical services based on a common open platform that offers high performance low cost professional telemedicine services and reuse in-home infrastructure to minimize deployment costs. All relevant stakeholders such as doctors, patients, hospital administration, medical service operators have been included in the validation process allowing HIPERMED solutions to be widely adopted and more and more medical services and hospitals are taking up HIPERMED solution

■ More information is available at <http://www.hipermed.org>