



proposed a seamless mobility architecture with QoS support in heterogeneous wireless access environments. The proposed architecture integrates an

extended version of IEEE 802.21 framework with QoS support, as well as an advanced mobility manager integrated with the Mobile IP (MIP) mobility

management protocol. It is also proposed an extension to the handover decision-making processes in heterogeneous access environments through the integration of context information from both the network elements and the end-user. Performance tests are developed in a real testbed to validate the proposed optimizations in an inter-technology handover scenario involving WIMAX, Wi-Fi and 3GPP UMTS/HSPA. This research work has a strong impact in industry, and simpler versions of the developed architecture are being developed towards products, related with heterogeneous wireless access networks coexistence: a connectivity management product ("MyConnect") and a seamless mobility management pre-product ("MyMove").

SARDANA – first time demo of 1000 clients on a single reconfigurable passive optical access network

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FTTH is nowadays a must have in most developed and even in developing countries. Investments are being made all over to try and minimize the "digital divide". For that, several are the problems being raised among all players in this ecosystem: the users, the operators, the service content providers, the regulators and any newcomer. Portugal, following many countries, is leading the number of homes with fiber already passed to it. It is still gathering traction on the number of connected users, by now only early takers, but fast moving to a massive access to ultra high bandwidth services. Besides the

changes this will bring to the way people act, this will effectively open a set of new opportunities (new services, new ways of working, etc). However, despite the fact that this is a high interest and investment field, the number of barriers that prevents this business of being a full success is high, namely the full availability at a sustainable cost, the deployment strategies, the competition, and others. Contributing to these high level problems the SARDANA project promoted several state of the art technologies which enable to overcome most of these limitations. The project

observed concepts like "colourless ONUs", which allow the same set top box to be used agnostically to the provider assigned band, allowing with this, mobility within operators and openness (a regulatory trend). Also, with the ring architecture inserted in the PON, failures can be worked out very fast minimizing the down time, therefore reducing outage and service prevention, very critical for high priority services or situations. By developing intelligent self-sustained harvesters and low power electro optic mechanisms, the healing and redefinition of the network becomes automatic and self-regenerative, increasing quality of service and flexibility when changing the network. Also, remote amplification, allows full passiveness of the outer plant, and still cover remote areas (100km distant) as well as 1000+ subscribers from a single active central office. This is a big step into reducing the digital divide and allowing seamless evolution of the networks. SARDANA has contributed to standards, won an award, produced more than 100 publications and pushed the directions of deployments (e.g the ARENA Italian project) and future networks.