SmartSatCare: A TV-based solution to face the COVID-19 crisis
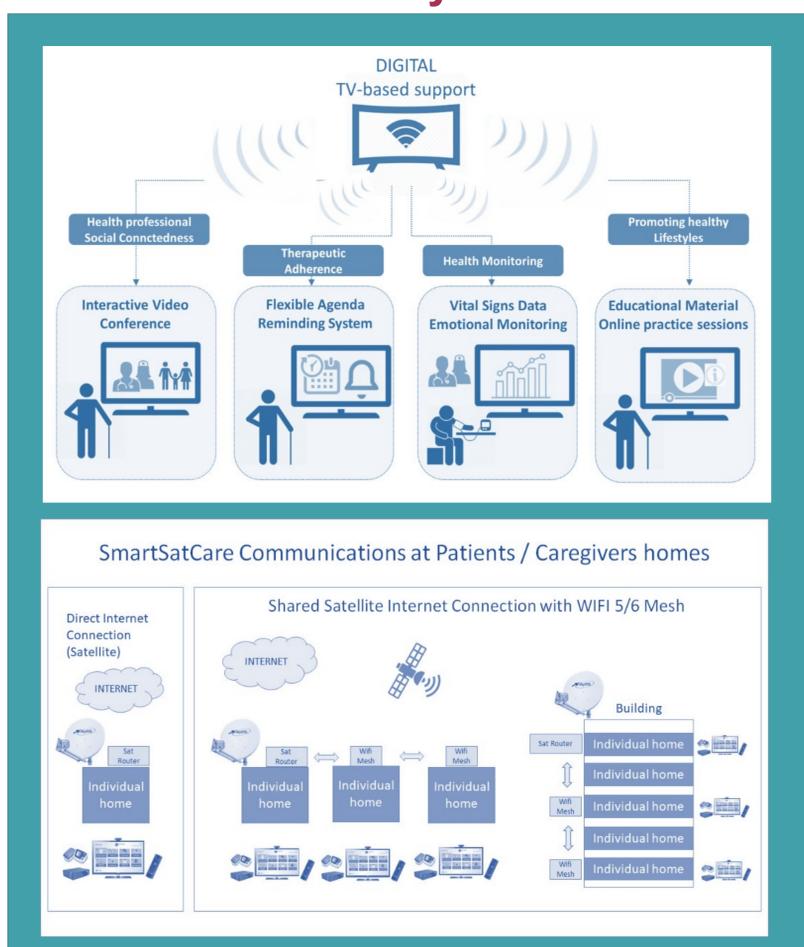
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https://business.esa.int/projects/smartsatcare

Abstract

The sudden advent of the pandemic crisis caused by the SARS-CoV-2 virus has put a strain on the organization and provision of social and health services, especially in isolated geographic areas characterized by territorial and virtual connection difficulties. The **SmartSatCare** if a project funded by the European Space Agency in response to the pandemic crisis to develop and test a technological solution for **tele-health** and **tele-assistance**, with the goal to help citizens and socio-health workers to mitigate the consequences of the COVID-19 emergency in geographically extended areas, such as the Cuneo region in Italy, managed by the ASL CN2 of Alba/Bra.

The SmartSatCare system

SmartSatCare Services and Technological Solution

The system is composed by a simple Smart TV device (Set-Top-Box) connected to the existing home TV set via the HDMI cable, and to the Internet using a **satellite connection**. The patient at home can interact with the system through the use of a remote control. The services are:

- *Video conference*
- *Reminder*
- *Health Monitoring*
- *Educational Material provision*

In pursuing its goal, the focus of the project is to overcome the difficulties typically associated with the use of technology, due to both lack of digital education and poor Internet connections. The SmartSatCare solution is based on the open source Android platform (AOSP) integrated on a digital TV, thus creating a technological ecosystem that can facilitate integration with dedicated applications as well as other tools such as smartphones, tablets and medical devices for remote monitoring of vital parameters.

Over a timespan of 12 months, an initial phase of technology development is planned which will be followed by a phase of installation and **long-term evaluation of the solution in at least 80 homes** in the region pertaining to the ASL CN2.

Expected Impact

The beneficiaries of the system are **older adults and frail people**, **their caregivers**, and **socio-health workers**. From a logistical point of view, the SmartSatCare system aims at mitigating the problems that may arise from the decrease of home visits by operators or visits to the hospital by patients, in emergency situations such as in the case of the COVID-19 lockdown. The solution will allow visit as well as remote monitoring for treatments, medical consultations or follow-ups, ensuring a certain continuity of care, which may be crucial in patients with chronic diseases. In addition, it will also allow remote psychological support, of particular relevance in situations of domestic isolation often aggravated by mobility problems or by the occurrence of COVID-19 quarantine.

IMPROVED COST-EFFECTIVENESS OF HEALTH AND SOCIAL CARE SERVICES

PATIENTS	CAREGIVERS	SOCIO-HEALTH WORKERS
Increased therapeutic adherence. Decreased social isolation. Facilitated access to both useful information and educational content on health, well-being, lifestyles. Easy retrieval of information related to COVID-19.	Limiting the stress related to the care activity. Facilitated access to information on treatment procedures and training events. Opportunity to join the meetings between the doctor and the loved ones through telepresence tools	Remote visits. Remote monitoring of patient's medical parameters. Psychological support