

**Scope:** ☐☐ Advanced Telecommunication System with Location Tracking Services (LTS) a  
**Keywords:** eHealth, Blood Safety & Management, Medical Records Management & Security  
**Partners:** University of Cyprus (UCY)  
eMedi8 digital solutions Ltd  
Thalassaemia Center, Makario Lefkosia Hospital  
Ministry of Health, Medical and Public Health Services  
Thalassaemia International Federation  
**Status:** ☐☐ Delivered - Technology Advancement & Dissemination  
**Publications** : [ELPIDA Article in RPF's Ypsipetis magazine issue 22 \(PDF\)](#)

### Description:

Following up on the valuable research work done through the 'ELPIS' research project, the research consortium composed of the same partners progressed the research work through the 'ELPIDA' research project while improving on the basic concept and adding and enhancing functionality relevant to Location Tracking Services (LTS) and Ambient Assisted Living (AAL) concepts.

The 'ELPIDA' project involved stakeholders achieved the re-design, implementation and installation of a prototype pilot information system for the automated handling of (regular and temporary) cases for which there is lack of blood units, and also to test and verify this system using actual sample data and simulation of emergency cases, with respect to the new LTS functionality and other system enhancements.

Specifically, under the 'ELPIDA' Research Project the following key milestones were successfully reached:

- Design and implementation of the software system based on obtained data, LTS functionality guidelines and experience from previous research work,
- Enhancement of Ambient Assisted Living (AAL) concepts implementing special provisions for older donors and recipients with location-based profiling,
- Test, evaluation and subsequent modification of the 'ELPIDA' research project prototype system, making use of test data and actual sample data,

- Dissemination and exploitation of the results of the 'ELPIS' project, especially since they were considered quite satisfactory.

### **System Operation**

The 'ELPIDA' research project system is based on an ERP platform with health-care functionality, AAL-based functions and LTS-based blood donor location awareness. The system effectively manages blood products, virtual storage areas, information workflows, communication workflows, blood donors, patients, health-care staff, current blood donor location, blood donor proximity to health care institutions with emergency situations and several more data objects and mechanisms managed through the system. The system provides for role-based multi-level access to information with a system-wide privacy and security mechanism that enables the handling only of information relevant to the specific functions of a health-care user's role. Sensitive personal medical information is protected at all times via a rule-based system that filters what information should be available to which user or role. Also, information regarding blood donor's current location through LTS, is secured and processed in a separate sub-system that allows only authorized incoming system calls and queries while enabling the notification of verified and approved blood donors based on their proximity to health care institutions with specific emergency situations. Implemented Ambient Assisted Living (AAL) concepts include special provisions and functions for older donors and recipients with location-based profiling.