

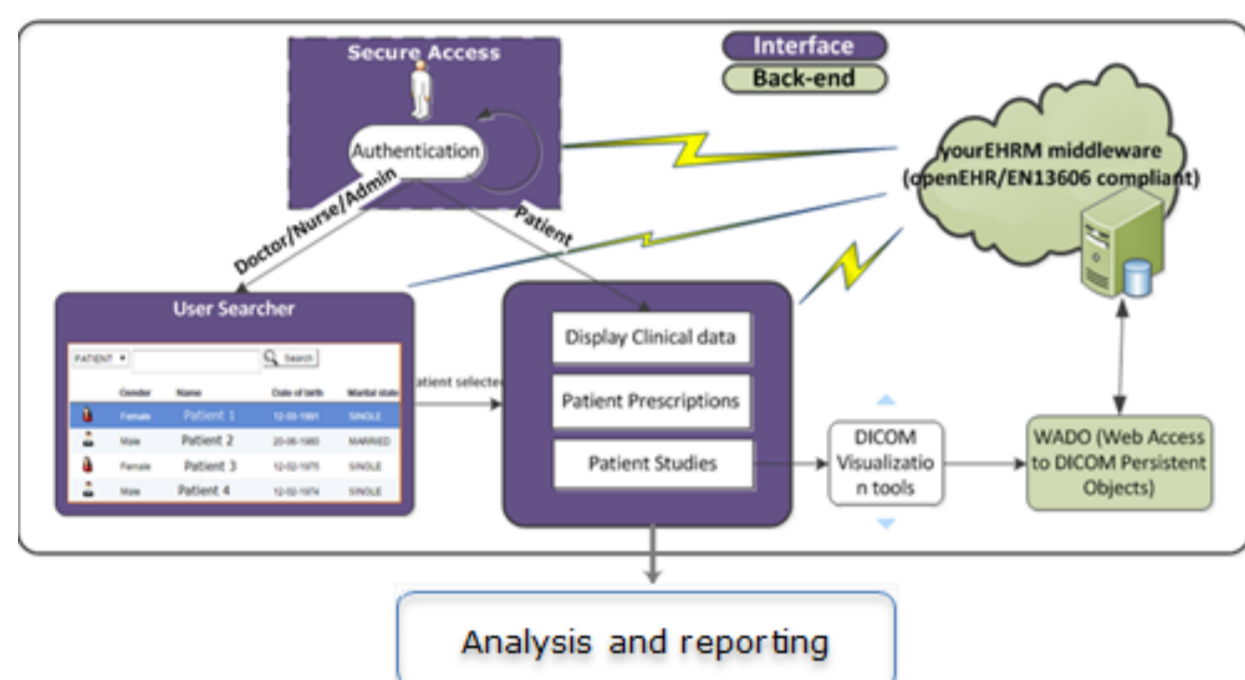
Domain



Motivation

Querying openEHR data

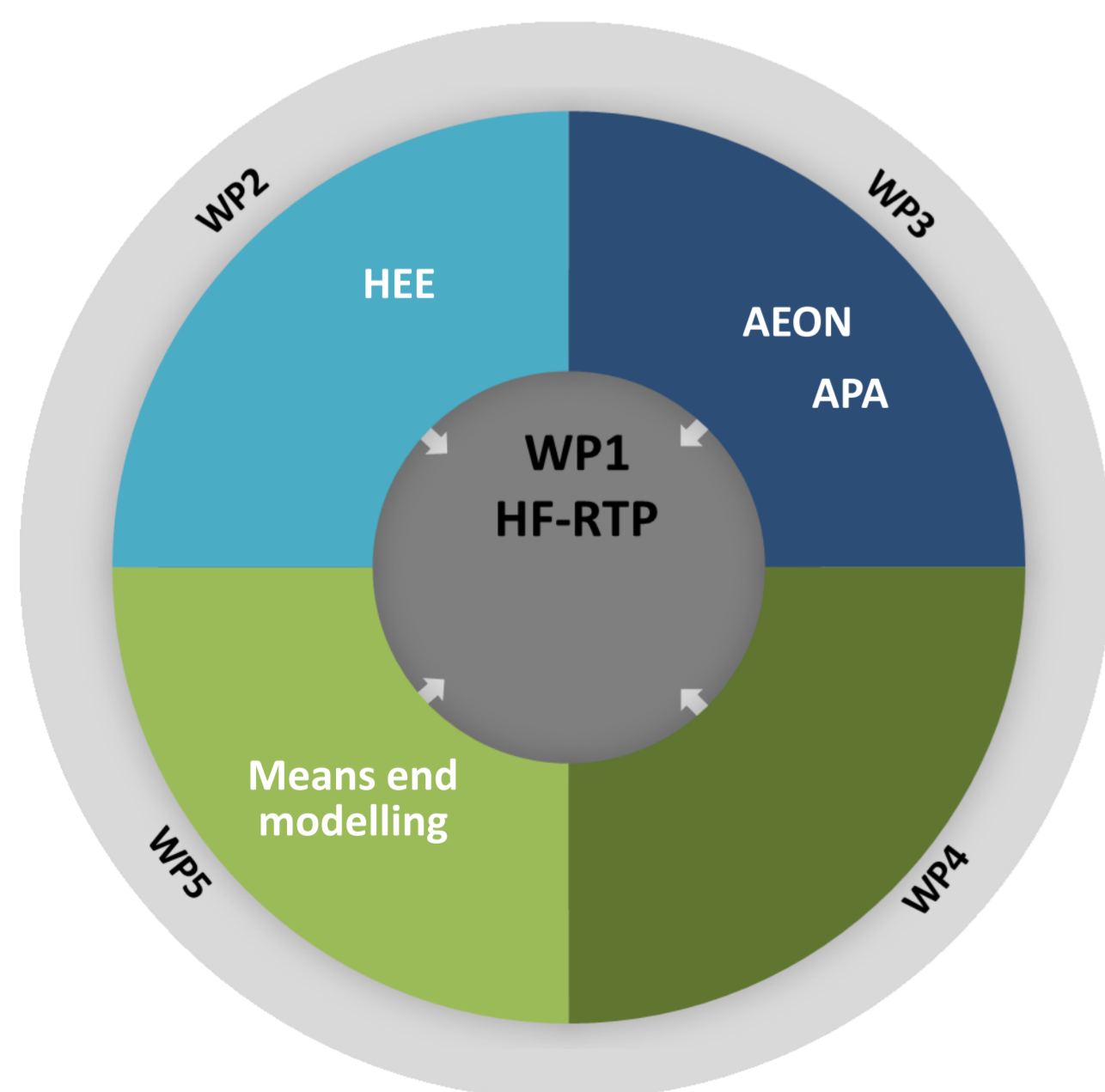
The objective is to improve diagnostic process and treatment of the patient keeping clinical data updated and complete. This AdCoS provides effective and secure remote access for patients and authorized professionals to EHR (Electronic Health Records). EHR contains the medical and treatment histories of patients, diagnoses, medications, radiological studies, etc.



Internal analysis and reporting

The objective of this AdCoS is (1) to access the patient data for statistical analysis of pathologies and (2) to generate patient clinical reports based on data coming from heterogeneous and fragmented healthcare information systems

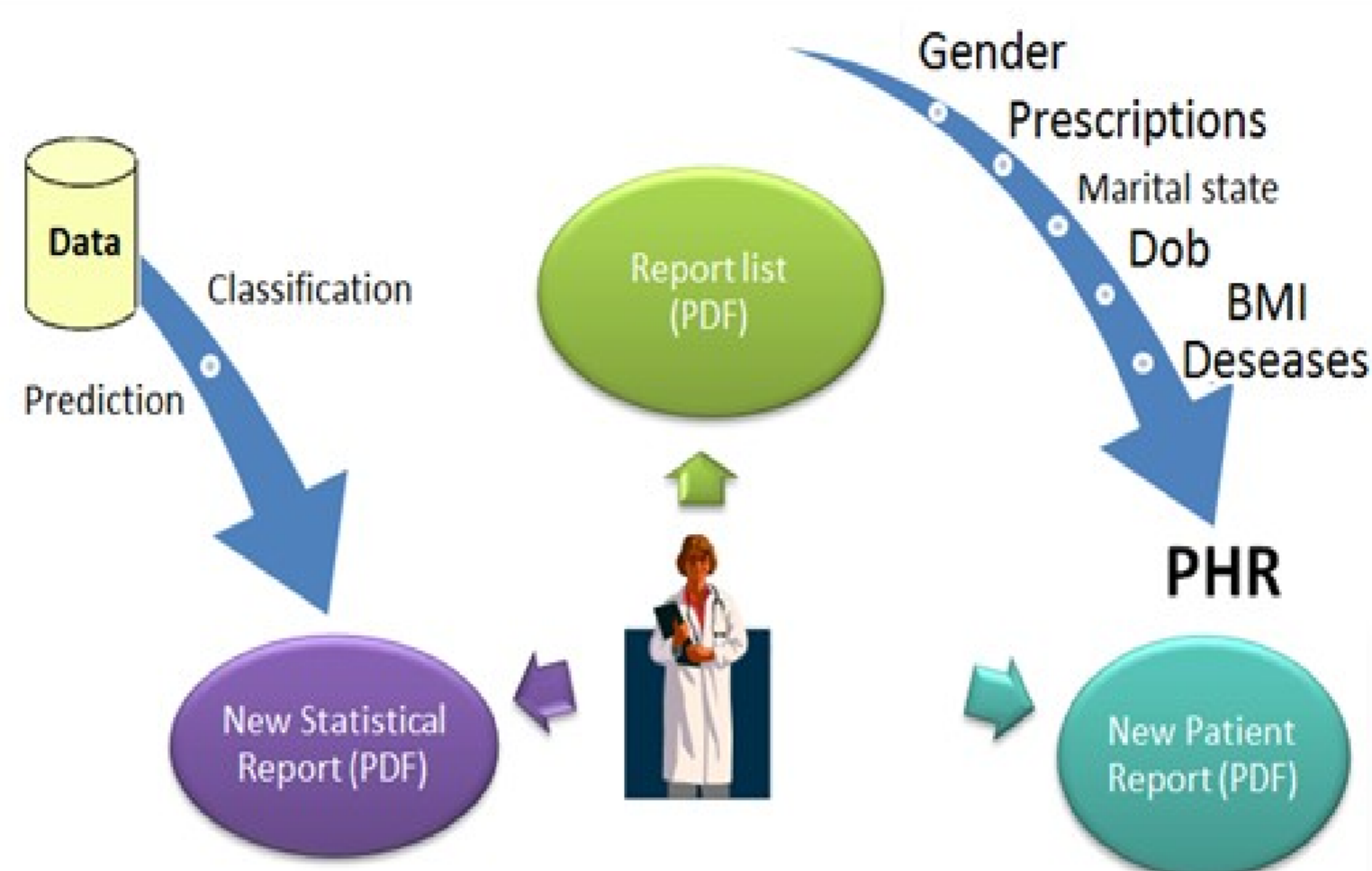
Applied MTTs



Final Development

The steps performed to analyse and develop the AdCoS workflows are the following:

- Describe the workflow
- Focus the most critical part of the workflow
- Mock up the UI
- Identify the tasks
- Create a table with the task sequence
- Preliminary conclusions
- GUI modifications following HEE suggestions



Several MTTs have been integrated in the development process: HEE, Means end modelling and AEON:

HEE

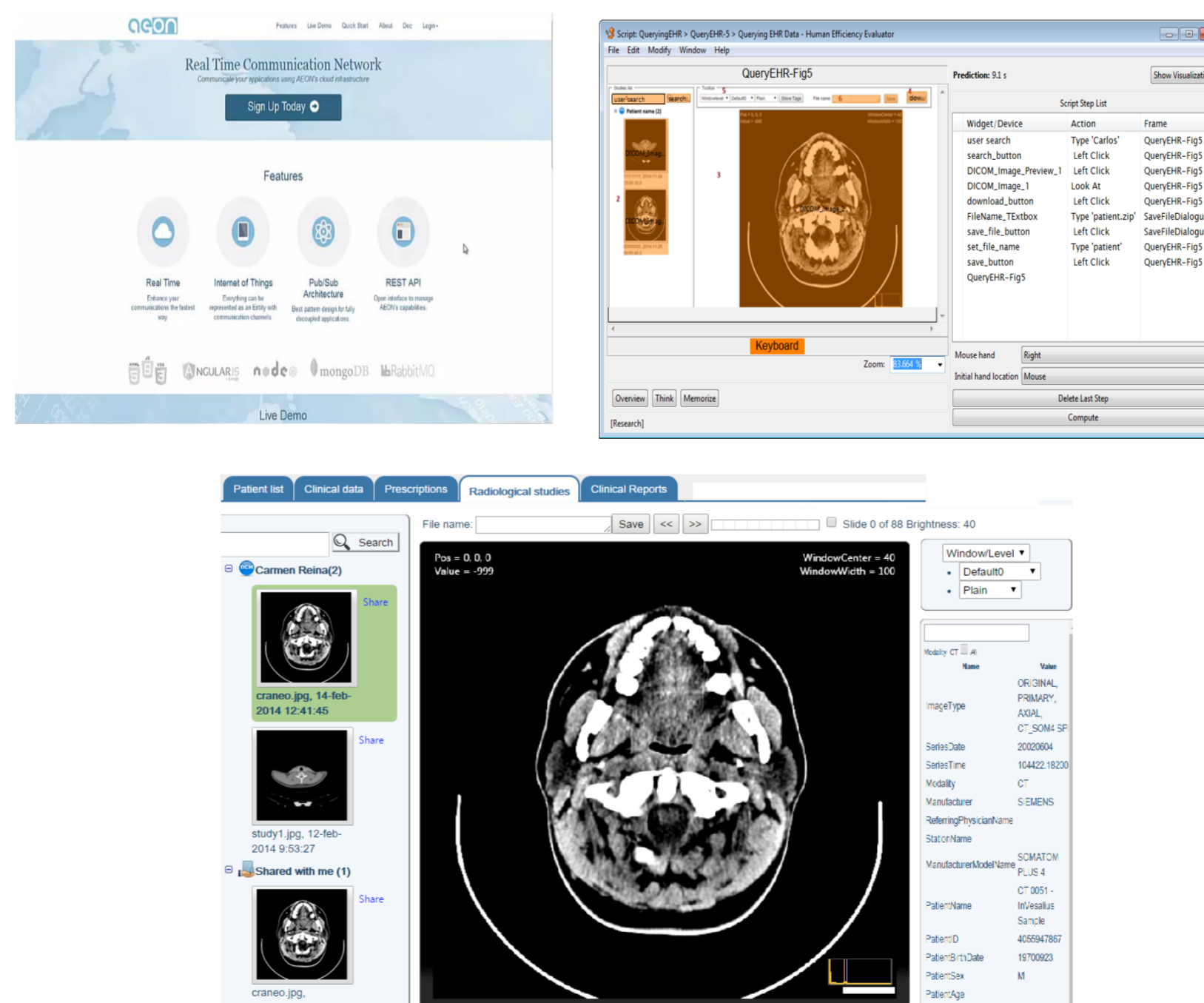
The HEE was applied to identify the most critical part of the workflow. The final HEE results served to adapt the Graphical User Interface (GUI) in order to perfectly display the radiological studies.

AEON

Cloud-based platform message AEON allows including new data into the web application. With this data, the system can be adapted to the user needs. The aim is to develop adaptable GUIs taken into account different information from the user stressing the importance of adaptability and interactivity

Means end modelling

During the design phase the implementation stage was focused in the means end modelling to retrieve the data from the EHR depending on the human factors related to the user.



Evaluation

Evaluation methodology

0. AdCoS baseline

It provides the users the possibility to access the EHR information and the images in the same GUI and apply intelligence over the clinical data.

1. Performance indicators

Two performance indicators have been selected:

- **Adaptability:** it measures how the GUI is adapted to the user needs.
- **Usability:** improvement in the GUI utilization gathered from the users.

2. Quantitative objectives

For the evaluation users have been tested the GUI before and after the changes providing feedback using surveys.

3. Measure before

Feedback before the implementation

4. Measure after

The same procedure has been applied to evaluate the new version of the GUI after applying the improvements given by the HEE.

5. Results

The ratings increased from 5 to 6 (15%) in adaptability and from 5 to 8 (35%) in usability.

Performance Indicator (PI)	Estimation
Adaptability	Increment 15 %
Usability	Increment 35 %

For the evaluation we included 10 patients, 10 doctors and one responsible for hospital IT, of different sex and ages. Most of the validation will be carried out by the end-users (patients and doctors), while the other users will provide more specific answers based on their expertise. They were in the hospital giving freedom to use the GUI in order to receive feedback with unguided use.

Contact

ATOS
C/ Albarracín 25, 28037
Madrid (SPAIN)
+34-912148756
M. Carlos Cavero
carlos.cavero@atos.net

Consortium



Acknowledgments

This research has been performed with support from the EU ARTEMIS JU project HoliDes (<http://www.holides.eu>) Any contents herein are from the authors and do not necessarily reflect the views of ARTEMIS JU.