# Social Robots as a friendly interface for Older Patients participating to Clinical Trials.

Susanna Del Signore[1], Behrouz Fard[3], Ina Flierman[3], Gianluca Zia[1], Stefania Del Signore[1], Alessandro Loria[1], Stephanie Jansen[4], Marian Hurmuz[4] and Lex van Velsen [4]

[1] Bluecompanion ltd, London, United Kingdom
[2] Bluecompanion France, Jambville, France
[3] Roessingh Centre for Rehabilitation, Enschede, Netherlands
[4] Roessingh Research and Development BV, Enschede, Netherlands
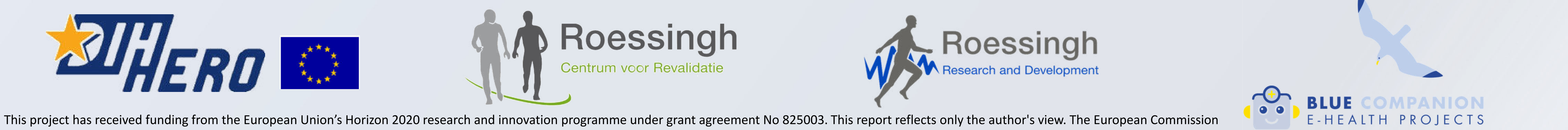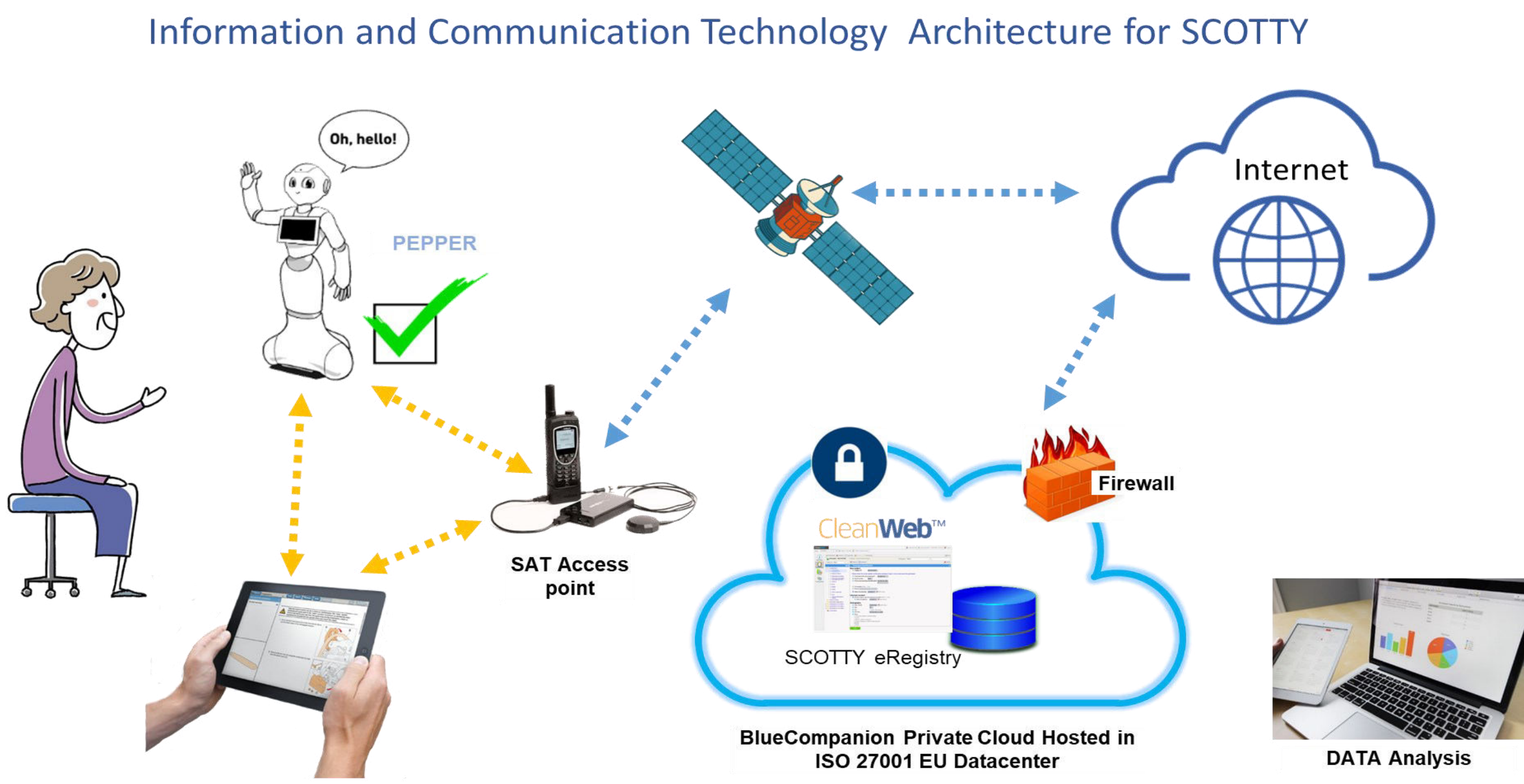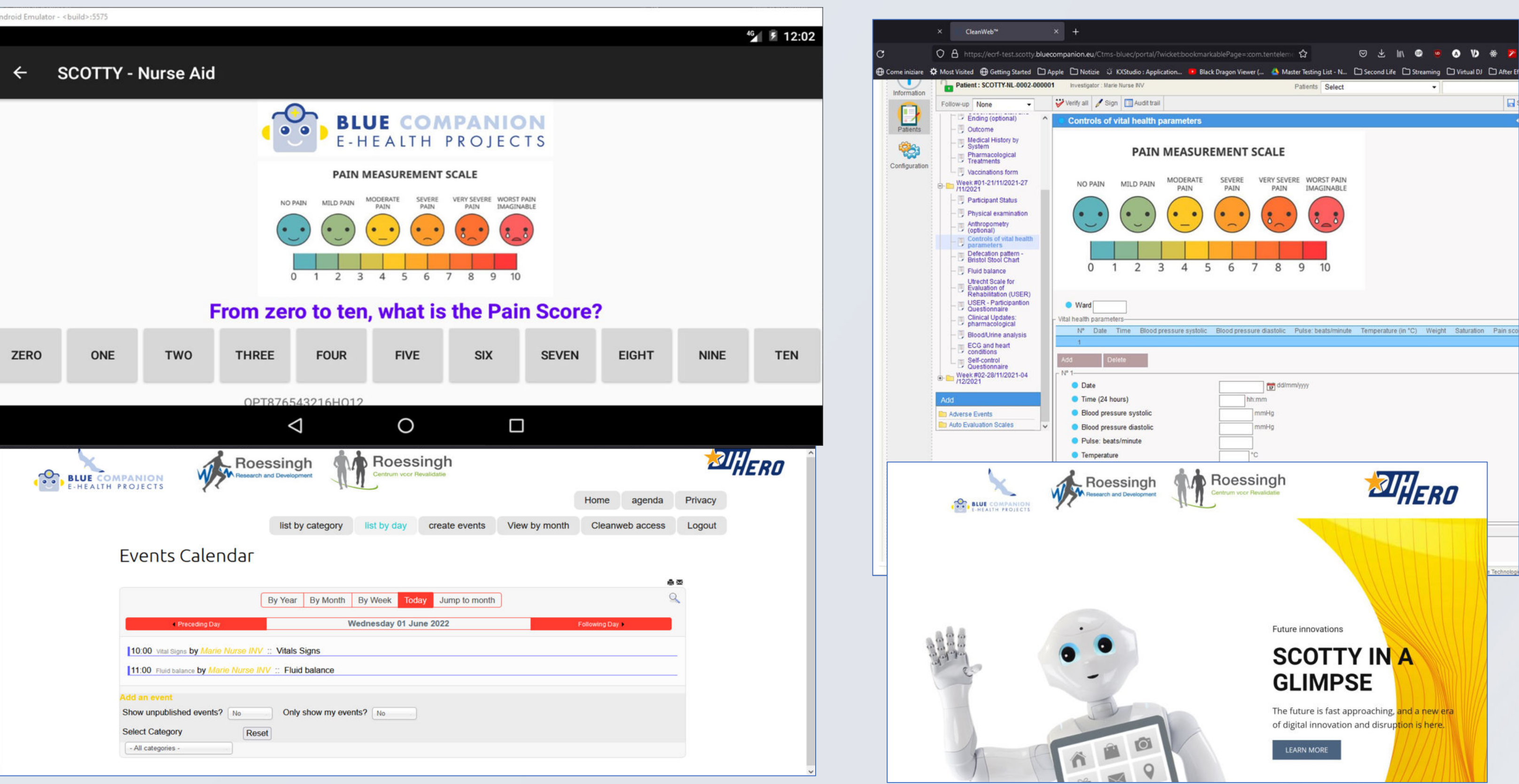
Introduction

We previously evaluated Nao, a small humanoid robot, to administer autoevaluation questionnaires to older adults. The robot starts a conversation, asks questions, waits for answer, interprets the content, and file results. Acceptability was good, with listening comprehension limitations e.g., for local dialects or low robotic voice loudness.

Objective

To test Pepper, a 120-cm humanoid robot (SoftBank Robotics) as a friendly interface for Patient's Reported Outcomes, remotely integrated to a web-based data platform.

Methods

RoessingR&D and Bluecompanion implemented Scotty, a technology transfer project funded by DIH-HERO (grant n.825003 Horizon2020).
The robotic persona was a Nurse Aid. Decreasing HCPs workload in the rehabilitation ward was among expected benefits, aside mitigating patients' perceived isolation during COVID-19 pandemic.

Information and Communication Technology Architecture for SCOTTY

The host
- To provide directions within RCR
- To ask out simple evaluation
- To ask menu preferences (breakfast / lunch / diner)

The nurse aid
- To interpret for non-Dutch patients
- To ask out questionnaires
- To store outcomes of self-administrated questionnaires
- To solve a puzzle with the patient
- To play a quiz with (the) patient(s)

The PT assistant
- To record routine exercises with patient and PT
- To provide information on transfers
- To remind patients to perform their routine exercises by showing the recorded videos

The companion
- To play a game with the patient
- To read a book with the patient

Results

We operationalised the project from March 2021 to May 2022.
The Scotty character was shaped according to users' requirements. Scotty follows a daily agenda, decided by the HCPs, collects clinical data via vocal interaction with patients, showing graphic examples or getting additional parameters via the tablet. Data are automatically forwarded to the customised e-CRF.
Scotty can show preselected physical exercises, reminding patients about physical exercises.
A chatbot-led casual conversations establishes an initial, friendly interaction.

Conclusions

The implementation of a connected social robot as HCP-Aid in a rehabilitation center constitutes an innovative approach. In term of usability, HCPs complained about additional robot-related tasks e.g. the need to accompany Scotty at the patient's bed.
Scotty can be a friendly interface to a clinical data platform and can be easily adapted to specialised geriatric infrastructures.

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