DeepUnity Capture: An Application for Digital Photo Documentation

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Abstract. The research on which this poster is based deals with the requirements engineering of an application for medical photo documentation. Against this backdrop, the poster sets out the underlying concepts of medical informatics, the process of medical photo documentation and the standardized procedure of requirements engineering. Using these standards and methodologies, requirements for a mobile photo documentation solution have been elicited, prepared, documented and modeled. As a result of this work, a standardized specification according to ISO/IEC/IEEE 29148, a demonstration model as well as a functional prototype of the application to be designed have been established. From this prototype, an application was developed that is now in routine clinical use and is constantly being refined.

Keywords. Medical photo documentation, Mobile app, Structured documentation, PACS solution

1. Introduction

Regardless of which departments are involved in a hospital, medical data must be available on demand. Particularly in the case of image-generating devices, the aspects of a medical image format must be considered to ensure high image quality. For this reason, the objective of this project has been to conceptualize an application that can be integrated into any existing hospital IT landscape using the healthcare communication standards currently in place. These image recordings are of high medical-legal relevance. It should therefore be possible to create and store them in a standardized manner, meaning within the DICOM format.

2. Methods

Survey:

- Review of the current state and initial requirements elicitation
- Modeling of a standardized process of medical photo documentation
- Structured brainstorming for further functional requirements elicitation

Preparation:

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- Categorization and priorization of requirements
- Creation of a Stakeholder and Software Requirements Specification
- Creation of a demonstration model for validation purposes
- Creation of a prototype for further validation

3. Results

The Stakeholder Requirements Specificaton and the Software Requirements Specification provide a complete, standardized outline of functional requirements and thus represent the basis of the development work. The demonstration model is a slide sequence that visualizes both functional and non-functional requirements and thus graphically complements the specification documentation.

The prototype is a development candidate which can be used for validation with stakeholders.

4. Conclusions

Within the defined scope, the relevance of standardized photo documentation for clinical routine has been demonstrated. The app can make a significant contribution to both standardizing photo documentation and streamlining the entire photo documentation process, thereby simplifying it for staff. Nevertheless, at the time of finalizing the poster, the assessment of accompanying circumstances and possible resulting requirements was not yet complete, as this would have exceeded the scope of the thesis. Continuous further development of the app should therefore be considered for successful use in everyday clinical practice.

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