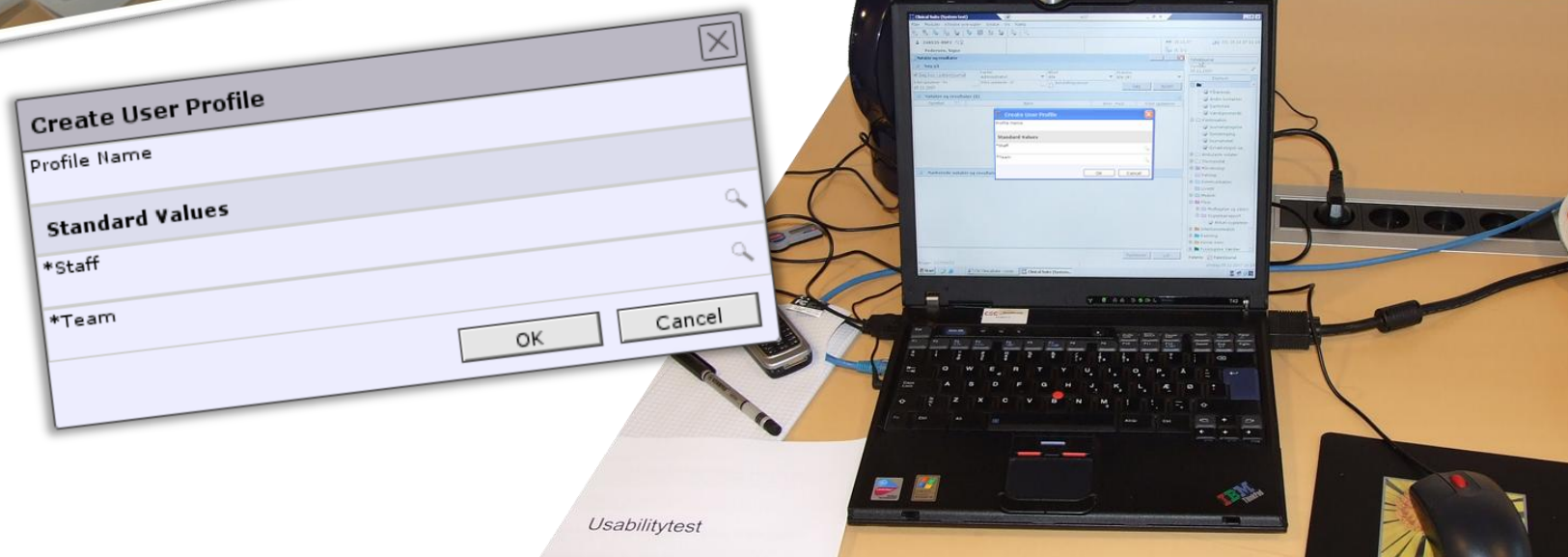
CSC Scandihealth

METHODS FOR DEVELOPMENT OF THE USER INTERFACE IN A DANISH E-HEALTH SYSTEM



Ulrich Böttger

- User Experience Designer at CSC Scandihealth
  with main focus on the electronic patient record *CSC Clinical Suite*™.

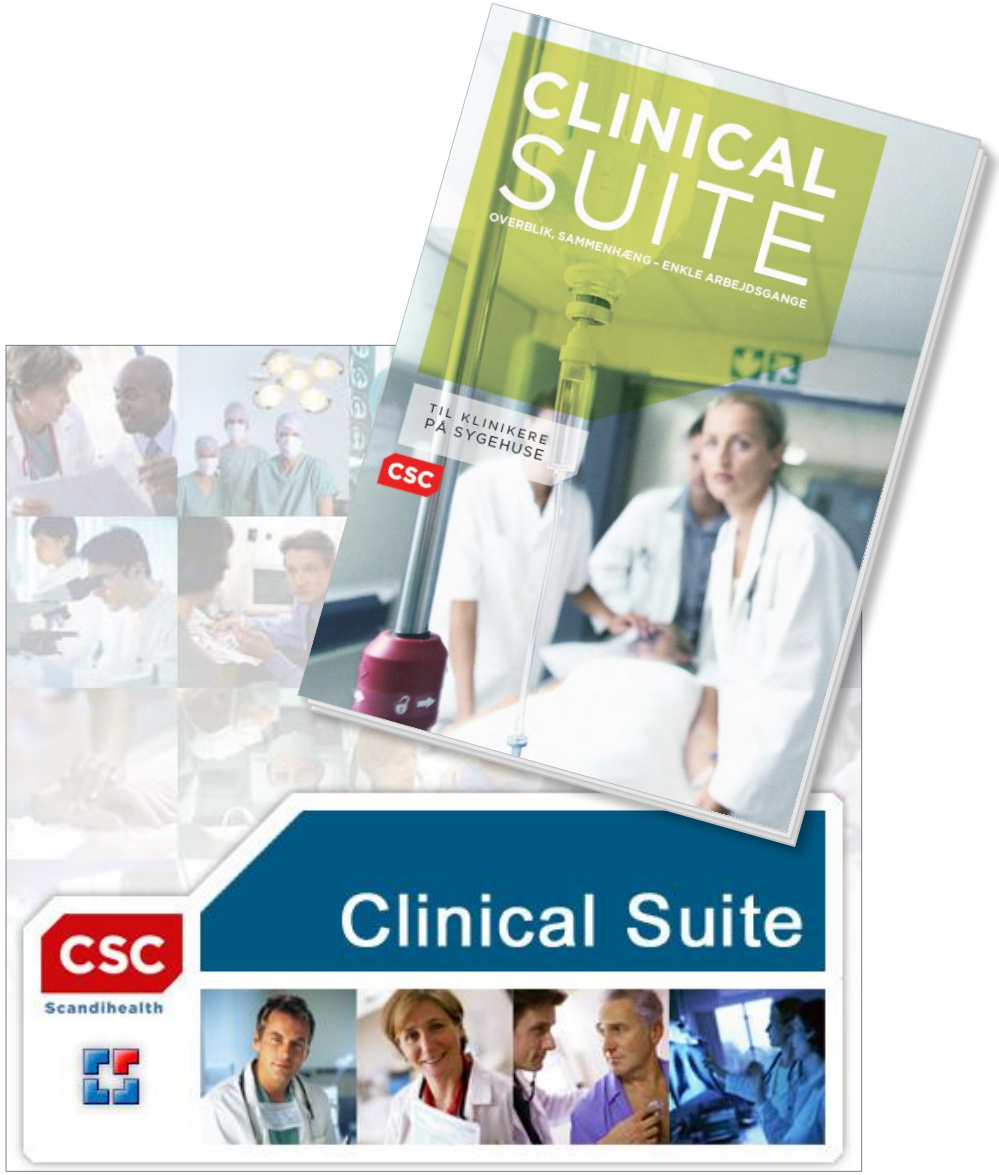
Agenda

- Our design method
  - Design workshops
  - Usability testing
  - Prototyping

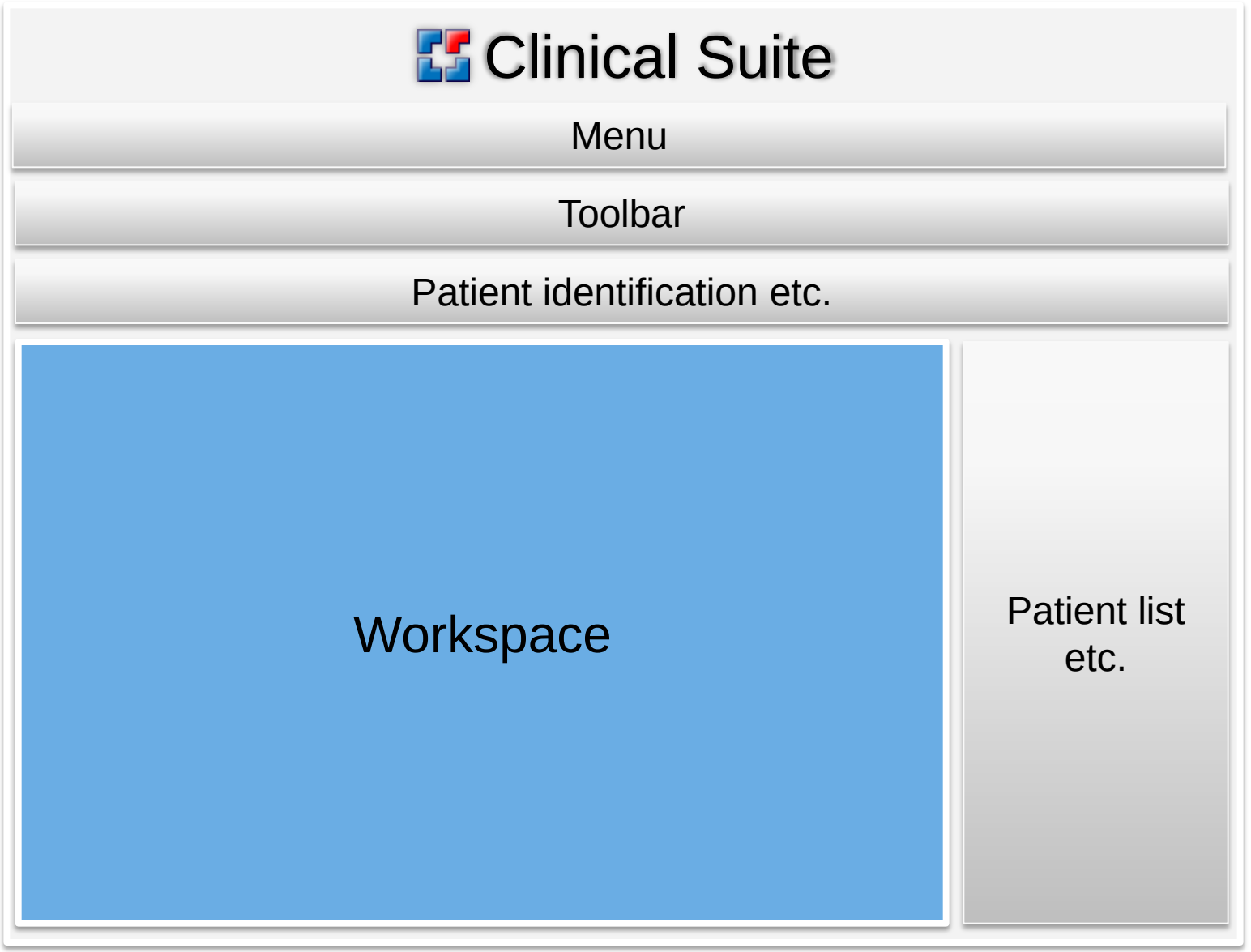
CSC Clinical Suite™

- Electronic Patient Record
  - Diagnoses and problems
  - Interventions
  - Notes
  - Medicine
  - Lab results
  - Radiology
  - Microbiology
  - Pathology

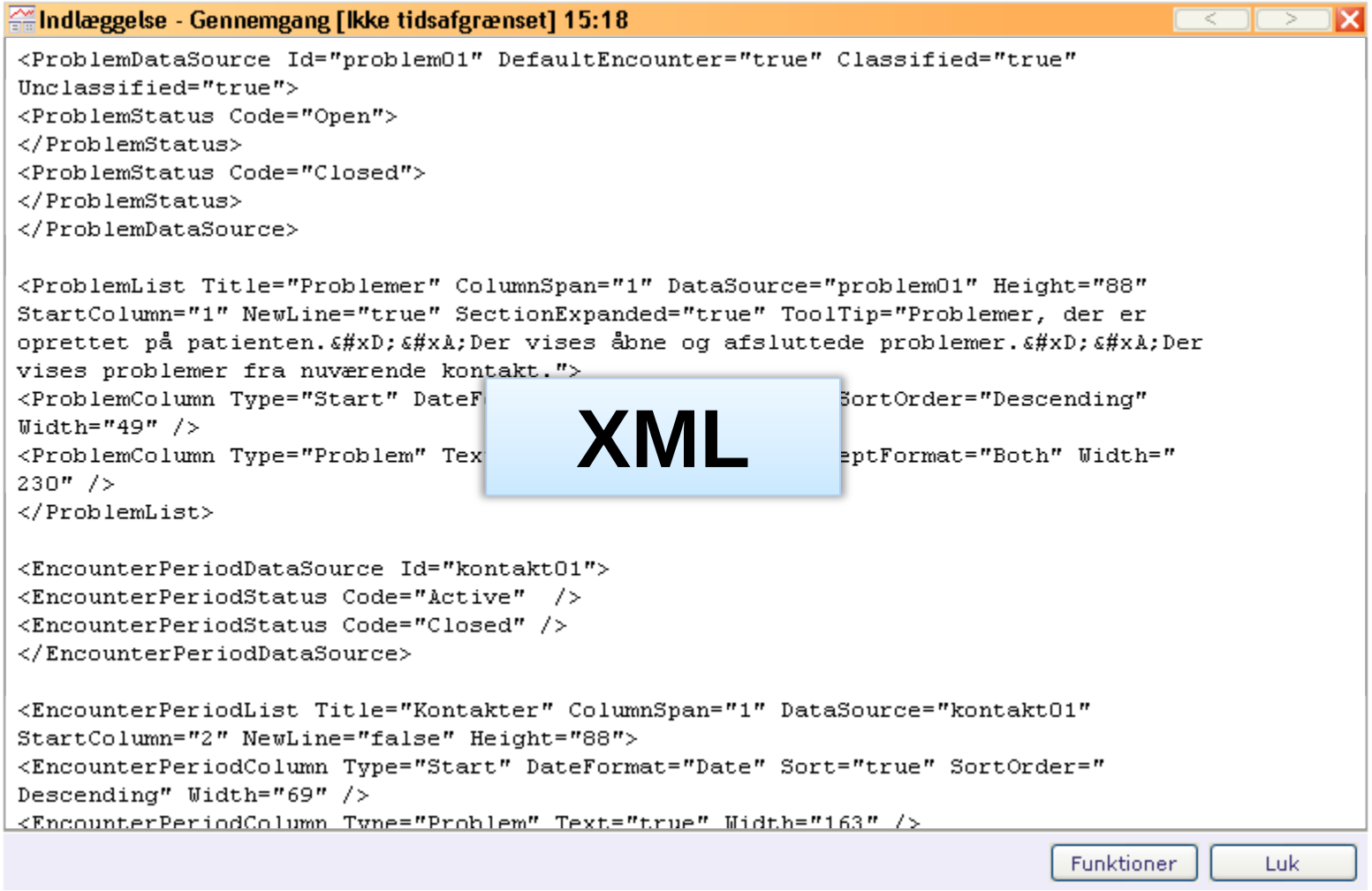
  - Highly configurable



CSC Clinical Suite™ | Highly Configurable



CSC Clinical Suite™ | Highly Configurable



CSC Clinical Suite™ | Highly Configurable

- Not dependent on developers
- Changes can be made instantly

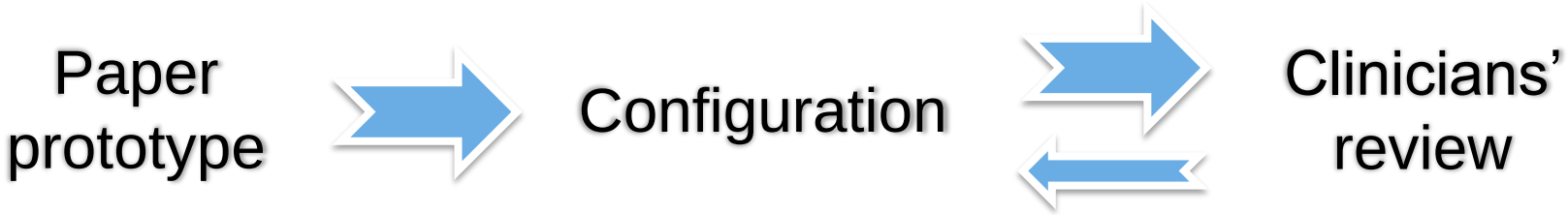
Design Workshops

- Scandinavian tradition of “Participatory Design”
  - Involve different stakeholders

- Participants
  - Specialists in Structured Clinical Content (SFI)
  - Clinicians working at the hospital
  - Project managers

- Paper prototypes
- Whiteboard sketches

Design Workshops



Usability Testing

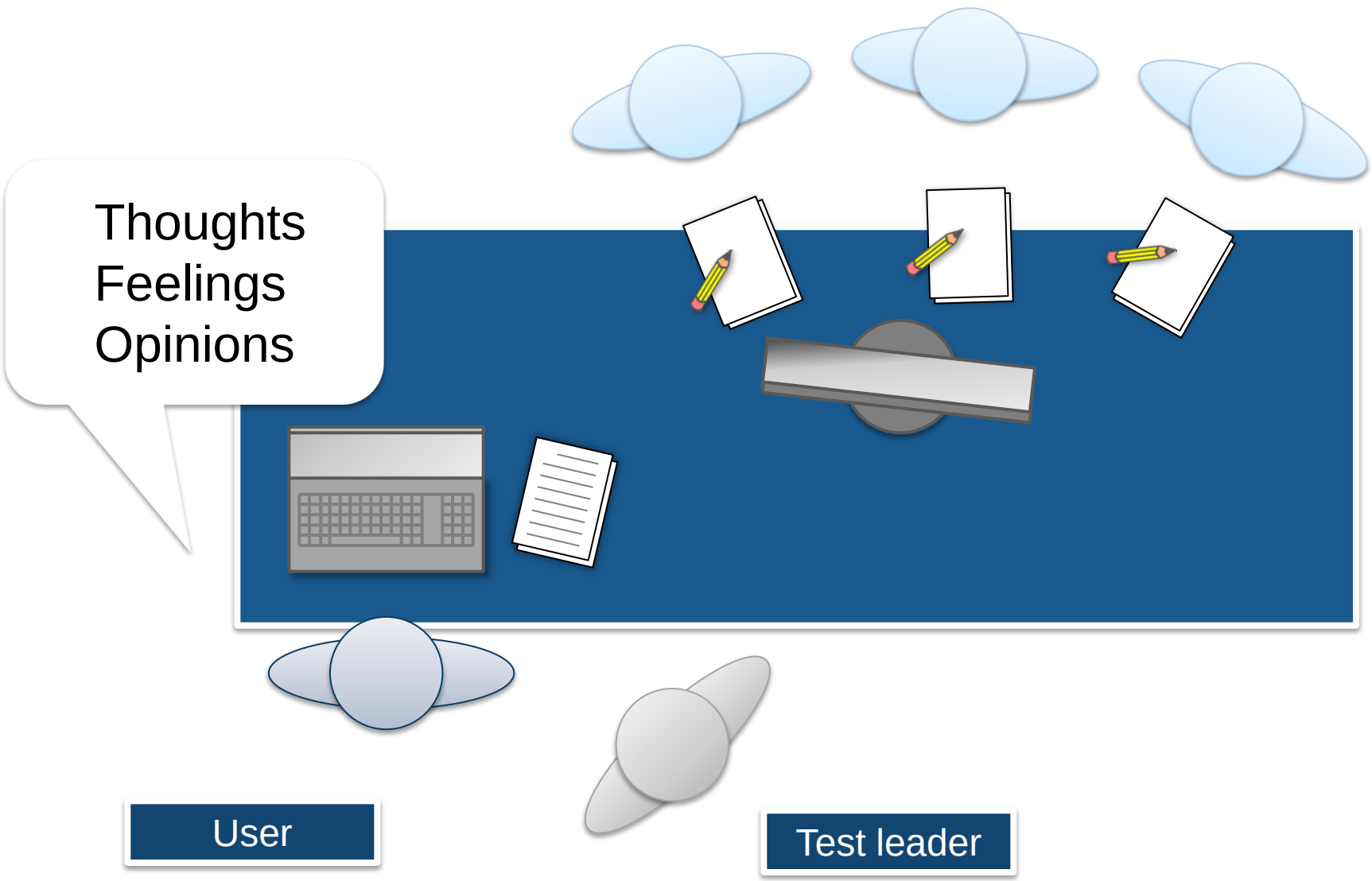
- 1 usability test/year
- We are testing before coding
- We test prototypes
- ”Think-aloud test”
  - Preparation
  - Conducting the test
  - Analysis and reporting

Usability Testing | Think-aloud Test

- 6 users
- 1 user at a time
- 1 test leader
- 1 or more observers

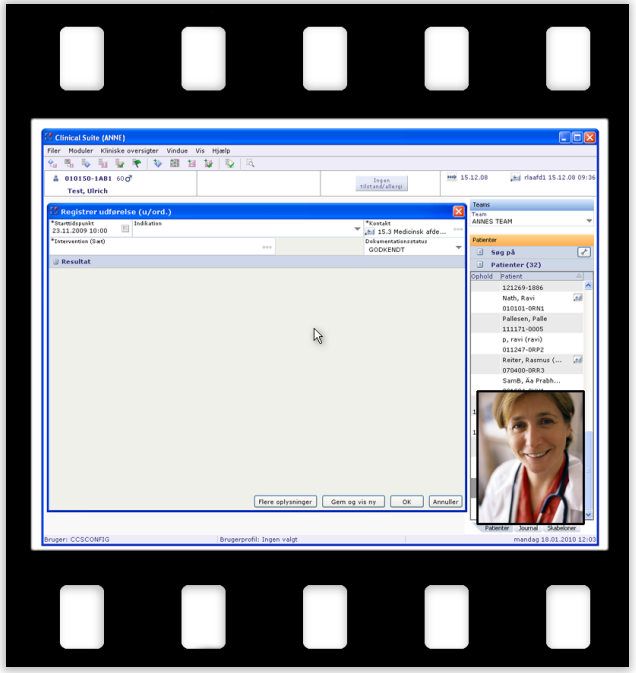
- 1-2 hours per user
- Usability test in total: ~300 hours

Usability Testing | Think-aloud Test



Usability Testing | Think-aloud Test

- Technical setup
  - Laptop with a webcam
  - Camtasia records the screen and the user



Usability Testing | Think-aloud Test

- Preparation
  - Recruiting users
  - Scenarios
  - Prototypes

Usability Testing | Think-aloud Test

- Analysis and reporting
  - Observer's notes
  - Possible video analysis
  - A short report describing the obervations
  - Prioritize and add observations to the development plans

Usability Testing | Think-aloud Test

- Are there no drawbacks?

- Unnatural situation:
  - Solving specified tasks
  - Thinking aloud
  - Unfamiliar surroundings
  - Being observed and recorded on video

- Pragmatic solution
- We have had good experiences

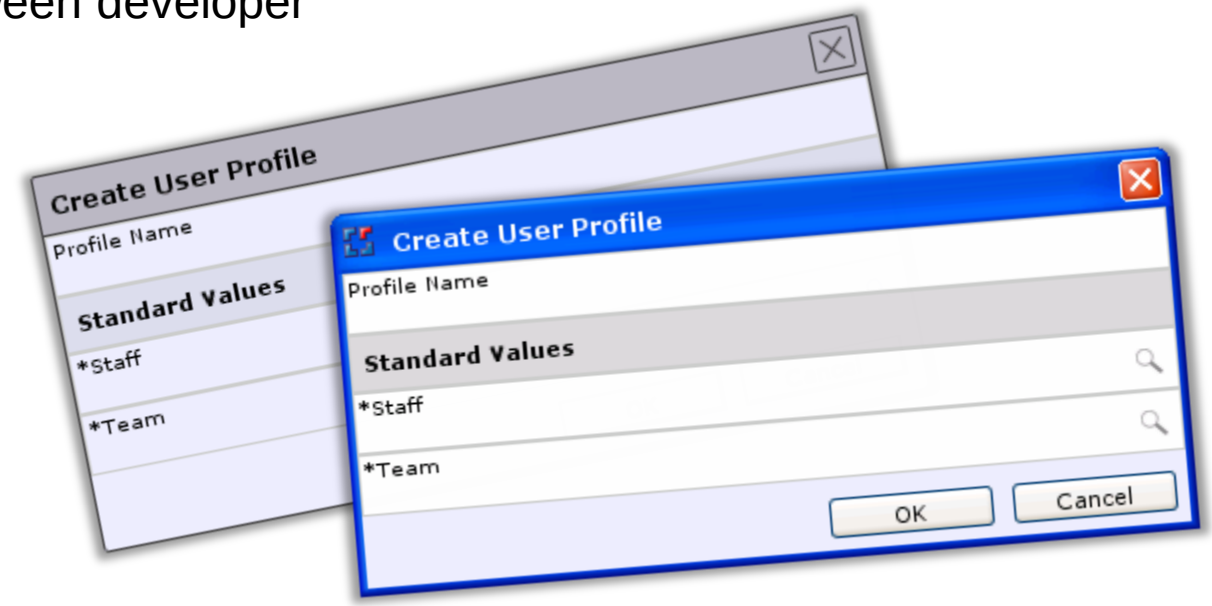
Usability Testing | In-Situ Tests

- In the beginning of November:
  - ”In-situ tests” in the North Denmark Region
  - Department of obstetrics and gynogology
  - Maternity record

- Real patients
- Real tasks
- Real surroundings

Prototypes

- Prototypes are evaluated in usability tests
- First step in the design process
  - From ideas to requirements
  - Bridges the gap between developer and designer

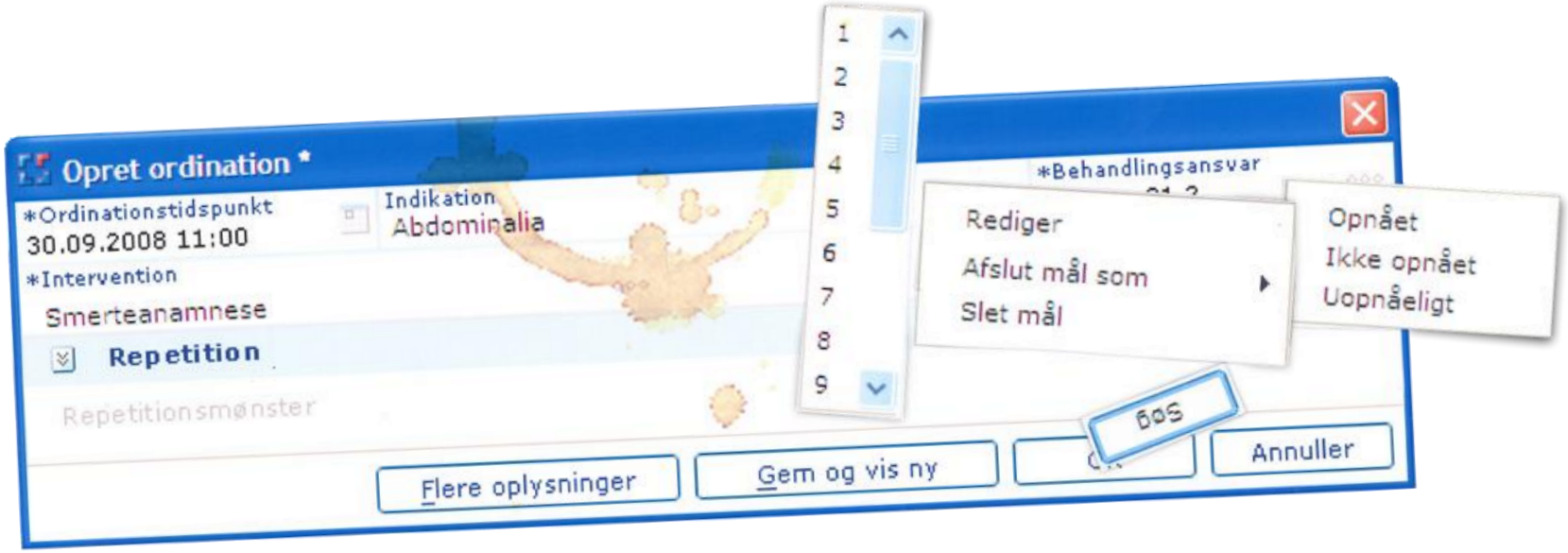


Prototypes

- Whiteboard and paper sketches
- Paper prototypes
- HTML prototypes

Prototypes | Paper Prototypes

- The paper emphasizes that the design has not been settled on
- Can be difficult to keep track of the bits and pieces
- Short life



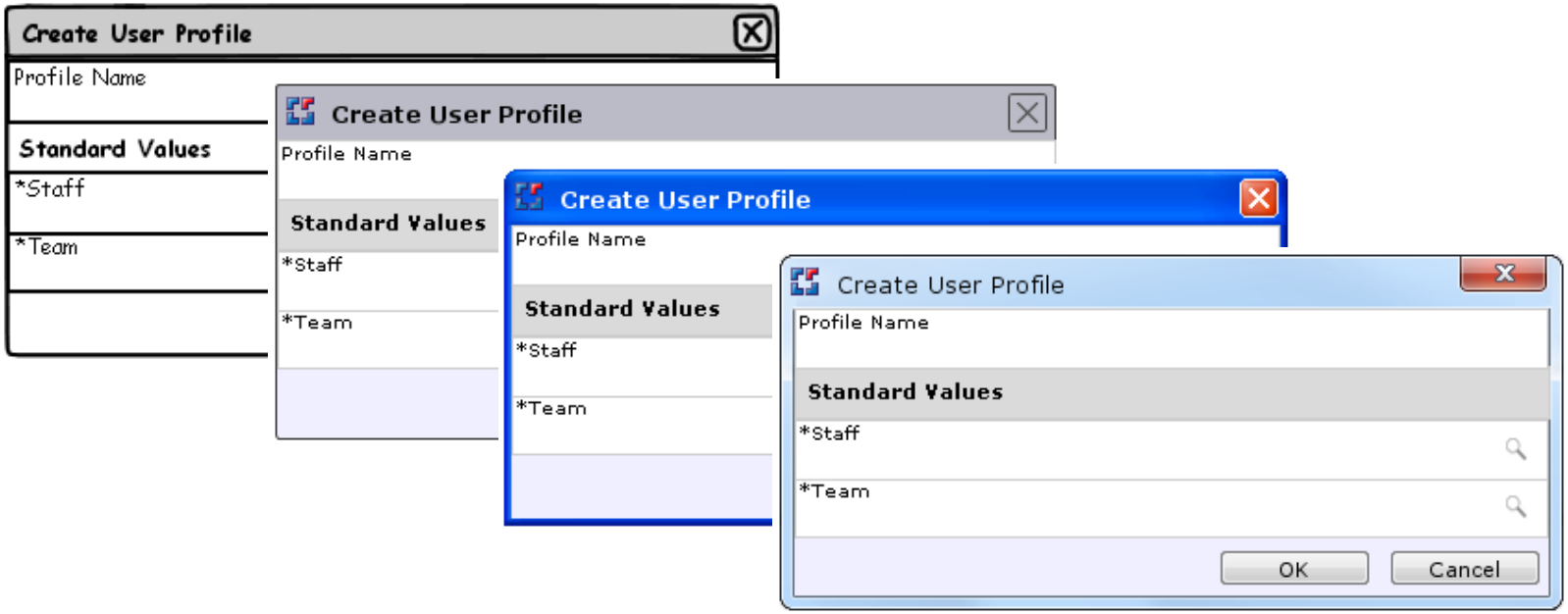
Prototypes | HTML Prototypes

- Stable
- Re-usable
- Easily distributed

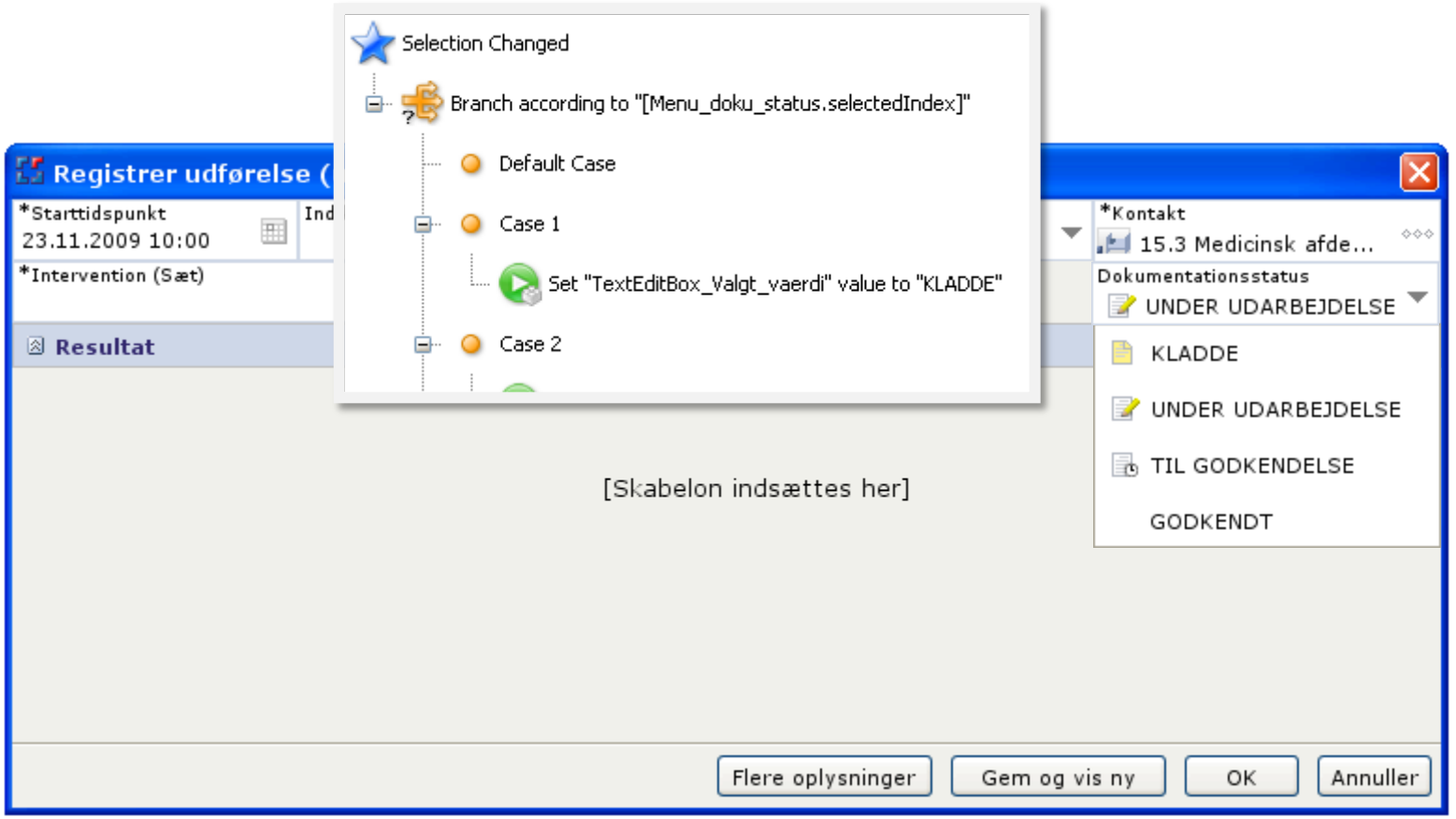
- Software: ForeUI

Prototypes | HTML Prototypes in ForeUI

- Includes many standard elements
- Build and reuse your own elements
- The look and feel can be easily changed
- Build interactive prototypes



Prototypes | HTML Prototypes in ForeUI



HTML → Shared drive / USB drive / E-mail → Any browser

Summary

- We design clinical overviews and templates in design workshops
- We evaluate our designs in think-aloud tests
- Prototypes are an integral part of our design process