

Description of the Bachelor thesis (MDA)

Location: Malmö, Interactive Institute
Duration: 21/1 – 2/6 2002

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Introduction

During the last year studies was conducted by Erling Bjarki Björgvinsson and Per-Anders Hillgren. After workshops and participatory design a prototype was developed. The prototype has been made for the intensive care in Malmö and is supposed to give instructions to the nurse's about different machines in their daily work environment. The instructions are given to the nurses through video on pda's. The system is based on tags for recognizing which movie that should be shown. Erling and Per-Anders have ideas about how the tags should be connected to the movies. It is here we will enter the project.

The prototype we will develop will be a first step in the iterative development process and its main purpose is for testing in its real environment. During the test ethnographical studies will be deployed for evaluating if the prototype is used in the way it was meant to. The information's collected during these studies will used for further development.

Project overview (Iteration 1)

1. Evaluate if we have the knowledge about modifying the software on a pda
2. Get familiar with the KLIV project
3. Depending on the outcome of the evaluation, the path take us to 3.1, 3.2, 3.3

3.0

Learning PDA

Learning bar code scanner and software / SDK connected to it.

Learning programming in Visual Basic or C++ (time consuming)

Learning SDK for PDA

Learning SDK for windows Media Player

Connecting bar code scanner with Windows Media Player (time consuming)

3.01 XML (Windows Media SDK)

Connection part XML script connected with bar code scanner

3.02

Visual Basic program connected with bar code scanner that starts a media file

Evaluate and testing the prototype (ethnographical studies)

3.1

Learning PDA

Learning bar code scanner and software / SDK connected to it.

Learning programming in Visual Basic or C++ (time consuming)

Learning SDK for PDA

Learning SDK for windows Media Player

Connecting bar code scanner with Windows Media Player (time consuming)

Evaluate and testing the prototype (ethnographical studies)

3.2

Learning PDA

Learning bar code scanner and software

Connecting WebPages to bar code scanner (stickers?)

Connecting WebPages and Windows Media player

Evaluate and testing the prototype (ethnographical studies)

3.3

Looking at other solutions
Evaluate and testing of the prototype

4. How Ethnomethodological methods can be used to find a way to construct instructions for the video recording system.
5. Arranging workshops for people in, hopefully, future branches and for the staff at MAS
6. Writing on bachelor thesis (During the whole project)

What we want to gain from this project

- To find out how it's to work in the real life
- The potential of video in the right context
- New ways to work and approach problems
- To get prepared for the future labour-market
- Learn more about instructions and to evaluate a system in a specific context
- Learn how to arrange and carry through larger workshops
- To work active with the prototype in the right context, (major part, ethnographical studies, analysis)

Possible problems

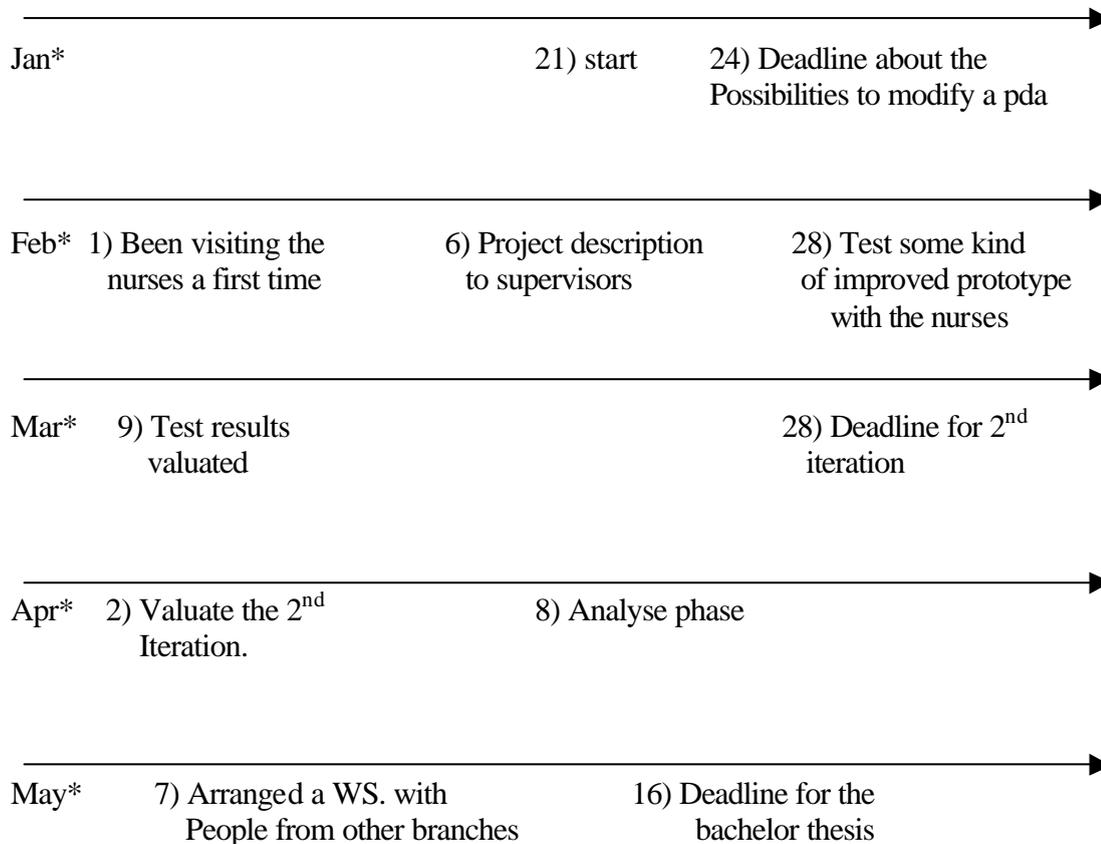
- That the developing kit for the pda is too complex
- Hard to find qualified help about programming on a pda
- Difficult to estimate the time it would take for us to become familiar with the SDK for the pda'
- Difficult to connect bar code to media player
- Time consuming to learn new programming languages (C++, Visual Basic, XML)

Solution

- There are always many ways to solve a problem

Time estimation

* Writing will proceed during the whole project.



This is only a sketch and is not the final project plan. Depending on the evaluation of the KLIV system and the possibility to modify it. The project plan will change during the project (situated action).

Final remarks

We have taken a brief look at the software and different development packages and may have a clue how to solve the first iteration in the prototype. But we are far from sure at this moment.

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Specification of development process

University specialist

Paul Nilsson. Blekinge Institute of Technology, Department of Programming and Computer science, Ronneby, Sweden.

Companies we have been in contact with:

WIP

Symbian

Communica Datadistribution AB

Dustin AB

Investigated platforms:

Windows CE

Linux

Development environments:

Embedded Visual Basic 3.0

Embedded C++ 3,0

System Development Kit (SDK):

PocketPC 2000

PocketPC 2002

Windows Media Player

Media software:

Windows Media Player 7.0

PocketDivXPlayer 0.8

PocketTV 0.6.4 and 0.6.5

Developer links

Category 1

<http://www.devbuzz.com/content/>

<http://www.devhood.com/>

<http://www.pocketpcdn.com>

<http://www.microsoft.com/mobile/pocketpc/club/newsgroups.asp>

<http://www.pocketpccity.com/boards/Developers/>

<http://www.vbce.com/>

<http://www.pocketpcthoughts.com/>

<http://topsites.cearchives.com/index.html> (top 100 windows CE sites)

<http://www.scottandmichelle.net/scott/code/index.html>

<http://support.microsoft.com/default.aspx?scid=kb;EN-US;q277742> (storage c. Prob)

<http://www.cewindows.net/ce30.htm>

<http://www.ppcnewswire.com>

Category 2

http://www.datamasta.co.nz/eVb_Code.htm

<http://www.eksperten.dk/>

<http://www.expandingsystems.com/>

<http://support.microsoft.com/default.aspx?scid=kb;SV;q276556>

<http://www.microsoft.com/mobile/pocketpc/default.asp>

<http://msdn.microsoft.com/>

<http://www.nca-corp.com/>

<http://www.cegadgets.com/vbcecrea.htm>

<http://www.justppc.com/evb5.shtml>

<http://www.pocketmovies.net/>

<http://my2cents.info/>

<http://wirelessforums.net/>

Interesting books

http://samsublishing.com/catalog/article.asp?product_id={CE3D1F59-917E-4606-B25A-B8DE689DC627}&session_id={E357E21E-48D4-441A-9AE1-068227967DB0}

Bar code scanner

http://www.socketcom.com/product/bar_inhand_sys.htm

<http://www.the-gadgeteer.com/silverslider-review.html>

http://www.silverdalen.se/portal_se/portal_se.htm (streckkoder)

Cameras

http://www.mobileplanet.com/product.asp?dept_id=3718&pf_id=MP730942&listing=1

Mailing list

microsoft.public.pocketpc.developer

Media Players

<http://www.projectmayo.com/projects/index.php>

<http://www.mpegTV.com/wince/pocketTV/#download>

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnwm/html/wmsdk.asp>

<http://wmlicense.smdisp.net/EIOU437/91BC29746/download.asp>

<http://www.ipaqsoft.net/php/freeresults.php?type=vid> (Links to software)

<http://www.pocketrocketfx.com/> (Many links to media sites)

Media Encoding // online courses

http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnwm/html/wmp7_markers.asp

<http://www.microsoft.com/windows/windowsmedia/training/default.asp>

Other Application development environment

<http://www.appforge.com/>

Memory Card

<http://www.geocities.com/romidar/mmcvssd.htm>

A comparison between different players:

Source: <http://www.mpegTV.com/wince/pockettv/compare.html> (last visited 25/2-2002)

	Casio MobileV ideoPlayer	PocketMulti media	ActiveSky Player	Packet Video PVPlayer	DIVX Player (beta)	Media Player	PocketTV	Software
	Proprietary (MPEG-1 video + DPCM audio)	Proprietary wavelet-based (?)	Proprietary	Proprietary flavor of MPEG-4	Proprietary: various flavors of MPEG-4 video with MP3 audio in an AVI Multiplex	Proprietary Windows Media video with MS ASF Multiplex	Standard MPEG-1	File format
	* .cmf	* .pmm	* .sky	* .mp4	* .avi	* .wmv ; * .asf	* .mpg ; * .mpeg	File Extension
	No	Yes	No	Yes	Yes	Yes	Yes	Can Stream ?
	No	Yes	No	No	Yes	Yes	Yes	Fullscreen/ Landscape
	No	Yes	No	Yes	Yes	No	Yes	Dither
	No	No	No	No	Yes	No	Yes	Microdrive optimization
	n/a	No	No	No	Yes	No	Yes	H/PC support
	Yes	No	No	No	No	No	Yes	BE-300 support

**Berätta vad du heter,
hur länge du har varit på IVA,
och vad dina arbetsuppgifter är.
Samt svara kort på någon av nedanstående frågor:**

1. Berätta om något positivt som hänt på arbetet de senast 14 dagarna. (nyligen)
2. Vad skulle du vilja lära dig mer om inom intensivvård?
3. Vad är det värsta som har hänt på IVA?
4. Vad är viktigast för dig i ditt arbete?
5. Vad är dina förväntningar på dagen i dag?
6. Vad krävs för att fler ska vilja arbeta på IVA?

Translation:

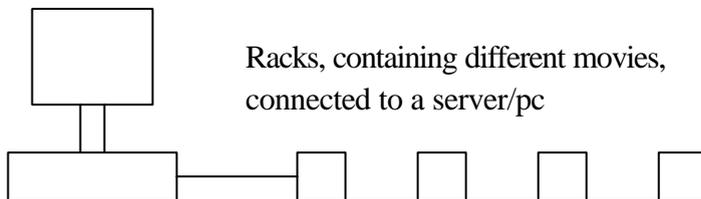
Tell your name, for how long have you been at the ICU and what is your assignment?
Please, answer short to one of the following questions:

1. Say something positive that have happened at work during the past 14 days.
2. What would you like to learn more about within intensive care?
3. What is the worst thing that has happened at the ICU?
4. What is most important to in your work?
5. What are your expectations of this day today?
6. What does it take to make more people want to work at the ICU?

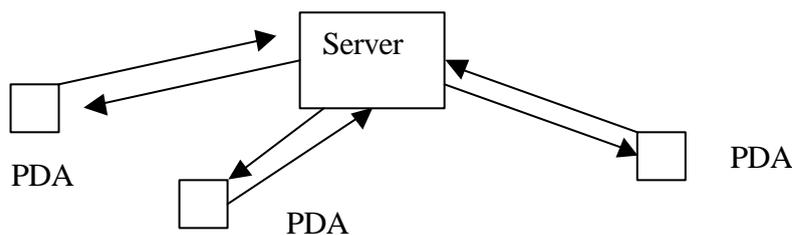
Solutions

2002-02-12

To retrieve the movies into the PDA, there could be different racks at a "station". The racks contain different movies, which are written on a list below or something like that. The movies will be stored permanently on the PDA.



If W-Lan works in the environment, the movies could be streamed to the PDA. This means that the movies are stored on a server and when a nurse wants to see a movie the "PDA" sends a request to the server and then retrieves the movie. Notice, the movie won't be stored permanent on the PDA.



A problem with W-LAN is that it's not allowed to be any nearer than one metre from a life-supporting instrument. So in the present state this solution is not recommended. Another problem with W-LAN that came up to us during a lecture with Anthony Dunn, is that who controls the information that is passing through a W-LAN? The information will be available outside the buildings of IVA and with the right equipment anyone can retrieve the information. This technology is constantly developed and will not in a to distant future be compatible with the life supporting machines. The streaming material will also be harder to retrieve.