

Logbook

Date	Activity	Durati on (hour)
01/10/2008	Info session about the master test	3
08/10/2008	Confirmation about idea for the master test	1
15/10/2008	Idea not confirmed	1
22/10/2008	Little talk about lessons about how to write a paper	1
27/10/2008	Searching on scholar.google for ideas for the master test	1
30/10/2008	Brainstorming with partner	1
05/11/2008	Linguapolis inputsession	3
	+ homework	1
	Paper about TinyDB	1
06/11/2008	Talking with mister Doggen about master test idea: TinyDB	2
	Researching other database applications	1
12/11/2008	Talking with mister Weyn about possible subjects for master test	1
	VGW + master contract (introduction)	1
13/11/2008	Talking with mister Doggen and mister bracke about further ideas for the master test	3
19/11/2008	Inputsession researchmethology	1
	Linguapolis inputsession2	3
	Master contract opstellen & gannt diagram	1
25/11/2008	Huiswerk Linguapolis	1
27/11/2008	Reading papers	5
03/12/2008	Inputsession researchmethology	1
	Linguapolis inputsession3	3
	+ Homework	1
	Reading papers	1
05/12/2008	Research at the library + making contact with Geoffrey Ottoy	2
	Reading papers	1
07/12/2008	Reading paper	1
09/12/2008	Making poster	3
10/12/2008	Meeting with promotor about master test	2
11/12/2008	Making presentation for Alumnia evening	1
	Alumnia evening	4
14/12/2008	Reading papers	2
15/12/2008	Beginning survey paper	4
16/12/2008	Writing survey paper	6
17/12/2008	Finishing survey paper	6
26/01/2009	Linguapolis session: Correction survey paper	2
27/01/2009	Correction survey paper	1
28/01/2009	Griep	
29/01/2009	Griep	
30/01/2009	Griep	
31/01/2009	Griep	
01/01/2009	Griep	
02/02/2009	Finalize correction with Peter and transform it into the latex format	2
03/02/2009	Investigation TOA	2
04/02/2009	Linguapolis session	3

05/02/2009	Reading papers	3
06/02/2009	Meeting with promoter	1
09/02/2009	Working with Netbeans, setting up work environment + parser	3
10/02/2009	Meeting with promoter (reading paper) + meeting with bachelor student	4
11/02/2009	Linguapolis homework	1
	Netbeans on the Image of David/Bundy works with java 1.6 which is incompatible with the java version on Ubuntu. Tried updating Ubuntu to the new Java version 1.6. Vmware image required more packages and crashed. Following step was installing netbeans on Ubuntu, limited virtual hard disk space, needed to reset image and expand disk space. The installing crashed as well, unable to install netbeans. Found the java version 1.5 with netbeans, so was able to compile the adapted parser with the right java version.	3
12/02/2009	Testing parser with the controller and database of peter → Failed:	3
	<pre> java.net.BindException: Address already in use at java.net.PlainSocketImpl.socketBind(Native Method) at java.net.PlainSocketImpl.bind(PlainSocketImpl.java:359) at java.net.ServerSocket.bind(ServerSocket.java:319) at java.net.ServerSocket.<init>(ServerSocket.java:185) at java.net.ServerSocket.<init>(ServerSocket.java:97) at parserv4.RequestHandler.createListener(RequestHandler.java:28) at parserv4.RequestHandler.run(RequestHandler.java:35) at java.lang.Thread.run(Thread.java:595) Listening on 1801 Exception in thread "Thread-5" java.lang.NullPointerException at at parserv4.RequestHandler.readConnection(RequestHandler.java:52) at parserv4.RequestHandler.run(RequestHandler.java:42) at java.lang.Thread.run(Thread.java:595) </pre>	
	<p>I searched for a solution and saw that the problem could be that the port is assigned to another process. But it wasn't. Maybe VMWare was blocking the port, opened it in the NAT. Finally checked the processes in Ubuntu (ps ux) and concluded that the process was still running and was causing this problem. So, killed it (kill -9 'processnumber') and the errors were gone.</p> <p>Next problem, it seems that the parser is stuck and isn't transmitting any data:</p> <pre> ubuntu@ubuntu:~/parser\$ java -jar parserv4.jar -comm serial@/dev/ttyUSB4:telosb serial@/dev/ttyUSB4:115200: resynchronising Created socket on port 3801 Listening on 3801 </pre> <p>Problem solved, a secondary node was missing, but old problem "bindexception" has returned, but the parser successfully transmits data to the controller.</p>	8

	<p>Installed MySQL and controller on desktop pc, to run as server for home. Noticed that the controller crashes after 30s, if parser is sending data.</p> <p>TODO:</p> <ul style="list-style-type: none"> • Fix bug with listeningsocket • Expand xml scheme to the new format • Fix instability of controller. 	
13/02/2009	<p>Testing the parser with Peter's controller: problem of bindexception didn't occur. So I concluded that the problem was locally to my computer. The controller also didn't crash after 30s and was stable.</p> <p>Expanding the XML scheme of the parser to make room for new data like RSSI, LQI and coordinates. We tested the new parser with the adjusted controller, but there is a problem with the controller if it receives a message from the parser.</p>	<p>1</p> <p>3</p>
15/02/2009	Making website and structure for portfolio	2
	Creating WIP reports for the portfolio	1
16/02/2009	<p>Meeting with Peter, phase 1 of the master test is finished, tested the adapted controller. Discussed adding new field to the xml scheme in the future. Discussed the next steps in our master test namely reading papers again</p> <p>Reading papers</p>	<p>3</p> <p>2</p>
17/02/2009	<p>Meeting with Peter about progress and interesting papers</p> <p>Reading papers & making design for parser connection details</p>	<p>1</p> <p>5</p>
18/02/2009	<p>Traveling + Linguapolis session</p> <p>Searching the IEEE + Springerlink + databases and the library</p> <p>Discussing the focus of our thesis with Maarten Weyn & Jerry Bracke + Traveling</p> <p>Continuing with making panel for the parser → Error "getenv JNI library not found"</p>	<p>4</p> <p>2</p> <p>3</p> <p>1</p>
19/02/2009	Meeting with Peter and discussing the following steps of our master test + discussing the algorithms + Reading datasheet of cc2420 radio: there is a voltage regulator so checking the influence of battery level's on the RSSI is out of the question	4
20/02/2009	Testing printf for Tinyos 2.0.2 + continuing with panel for parser	2
22/02/2009	<p>Finished panel for parser testing in tinyos, ERROR →</p> <div>Exception in thread "main" java.lang.NoClassDefFoundError: org/jdesktop/layout/GroupLayout\$Group</div>	3
23/02/2009	<p>Meeting with peter about GUI and application for the telosb nodes + administration (WIP)</p> <p>Problem solved by adding some code in build.xml of the project in netbeans:</p> <div> <pre> <target name="-post-jar"> <jar update="true" destfile="\${dist.jar}"> <zipfileset src="\${libs.swing-layout.classpath}"/> </jar> </target> </pre> </div> <p>(http://wiki.netbeans.org/FaqPackagingMatisseBasedProjects)</p> <p>Netbeans didn't add the layout to the .jar file which caused the error. When I first entered this error in google they all said that the classpath wasn't correct, even the FAQ off tinyos (http://www.tinyos.net/faq.html#SEC-15). So I extended the classpath so that it would contain my path of the jar file, but that didn't do anything.</p>	<p>4</p> <p>3</p> <p>3</p>

Then I started to look into some existing java app's in tinyos like AntiTheft.
But they didn't make us of a panel like I did in netbeans.
Finally I came across a website where someone had a similar problem en
guided me to the correct solution.

Problem with parser for string to int

```
Exception in thread "AWT-EventQueue-0"
java.lang.NullPointerException
    at parserxmlnew.Serial.<init>(Serial.java:29)
    at
parserxmlnew.connectiondetails.startrunning(connectiondetails.java:13
5)
    at
parserxmlnew.connectiondetails.jButton1ActionPerformed(connectiond
etails.java:120)
    at
parserxmlnew.connectiondetails.access$000(connectiondetails.java:20)
    at
parserxmlnew.connectiondetails$1.actionPerformed(connectiondetails.j
ava:50)
    at
javax.swing.AbstractButton.fireActionPerformed(AbstractButton.java:18
49)
    at
javax.swing.AbstractButton$Handler.actionPerformed(AbstractButton.ja
va:2169)
    at
javax.swing.DefaultButtonModel.fireActionPerformed(DefaultButtonMo
del.java:420)
    at
javax.swing.DefaultButtonModel.setPressed(DefaultButtonModel.java:2
58)
    at
javax.swing.plaf.basic.BasicButtonListener.mouseReleased(BasicButtonL
istener.java:236)
    at java.awt.Component.processMouseEvent(Component.java:5501)
    at
javax.swing.JComponent.processMouseEvent(JComponent.java:3135)
    at java.awt.Component.processEvent(Component.java:5266)
    at java.awt.Container.processEvent(Container.java:1966)
    at java.awt.Component.dispatchEventImpl(Component.java:3968)
    at java.awt.Container.dispatchEventImpl(Container.java:2024)
    at java.awt.Component.dispatchEvent(Component.java:3803)
    at
java.awt.LightweightDispatcher.retargetMouseEvent(Container.java:421
2)
    at
java.awt.LightweightDispatcher.processMouseEvent(Container.java:389
2)
    at
java.awt.LightweightDispatcher.dispatchEvent(Container.java:3822)
    at java.awt.Container.dispatchEventImpl(Container.java:2010)
```

	<pre> at java.awt.Window.dispatchEventImpl(Window.java:1778) at java.awt.Component.dispatchEvent(Component.java:3803) at java.awt.EventQueue.dispatchEvent(EventQueue.java:463) at java.awt.EventDispatchThread.pumpOneEventForHierarchy(EventDispatchThread.java:242) at java.awt.EventDispatchThread.pumpEventsForHierarchy(EventDispatchThread.java:163) at java.awt.EventDispatchThread.pumpEvents(EventDispatchThread.java:157) at java.awt.EventDispatchThread.pumpEvents(EventDispatchThread.java:149) at java.awt.EventDispatchThread.run(EventDispatchThread.java:110) [1] Killed java -jar panel.jar -comm serial@/dev/ttyUSB0:telosb </pre>	
	Problem solved	
	Linguapolis homework	1
24/02/2009	Meeting with peter about progress	1
	Adapting parser to handle different messages between the controller and WSN (with dummy data)	3
	Looking into user&development manual of the GUI + looking into MIG, MIG is a tool that automatically generates message objects from packet description.	1
25/02/2009	Meeting with peter: testing and correcting controller/parser to the new xml scheme and messages with dummy data.	4
	Generating java files for the different messages with mig	1
	Further expansion of the parser to handle live data in the new messages	3
26/02/2009	Meeting with Peter: testing the parser with the build application for the telosb (not so successful). Adapting the parser to the new generated message formats of the telosb application. Everything seems to work.	4
	Investigating possibilities of netbeans with Tinyos (requires cygwin)	2
27/02/2009	Installing cygwin for windows (http://www.tinyos.net/tinyos-2.x/doc/html/install-tinyos.html). Failed to a stupid error: "Couldn't locate cygwin1.dll"	1
	Going over with some nesc code with peter and testing some app's	1
	Checking parser with a simple apps on the telosb to check if it is capable of handling the new message formats. Noticed error in different version of parsers:	
	<pre> Exception in thread "Thread-2" java.lang.NullPointerException at parserxmlnew.Serial.run(Serial.java:36) at java.lang.Thread.run(Thread.java:595) </pre>	
	All the parsers transmit correct data to the controller, except the parser with new messages. Investigating...	3
01/03/2009	Further investigation of the exception + found solution the Motelf(gateway) wasn't successfully created.	2
02/03/2009	Refreshing Modules and the TinyOS Exxecution Model	1
03/03/2009	Planning trip for international project	1

	Helping bachelor student with setting environment and programming Telosb	4
	Setting up Tinyos 2.1 with vmware tools for experiment with threads	1
04/03/2009	Looking into TOSThreads (tutorial and example applications) → Cancelled should work with tasks	1
	Examining application for Telosb + expanding: different tasks, add demosensor, correcting errors...	
	Stuck at a weird error because there is nothing there that is wrong...	10
	<div> In component `BasicNetworkingC': BasicNetworkingC.nc: In function `BroadcastTask.runTask': BasicNetworkingC.nc:853: syntax error before `{' BasicNetworkingC.nc: At top level: BasicNetworkingC.nc:866: syntax error before `}' </div>	
05/03/2009	Attending demo of SCALE + working a bit on the telosb app	4
	Solved problem of the above error	
	Testing and debugging of my created application for telosb	6
06/03/2009	Meeting with peter	3
	<div> receive error for parserxmlnew.CollMsg (AM type 147): invalid length message received (too short) </div>	
08/03/2009	Further testing of parser & application for telosb, found that the error was with the application for the telosB (CollectReceive.receive). Fixed the error and found that the sensormessages were successfully received by the parser, but the locationmessages didn't arrive (new problem)	3
09/03/2009	Meeting with peter about the paper	2
	Writing paper	2
10/03/2009	Writing paper	2
	Meeting with Jeroen Doggen about our progress	2
11/03/2009	Writing paper	13
14/03/2009	Reading paper	1
15/03/2009	Fixing telosb app with different messages	5
16/03/2009	Meeting with peter, found problem with serial receive -> problem fixed	3
	Expanding telosB app and parser to handle the dissemination	7
17/03/2009	WIP meeting with Jeroen + giving demo	3
	Meeting with Olivier, Roel & Peter about trip to hannover + planning route	3
18/03/2009	Traveling to Hannover + going to social event	14
19/03/2009	WPNC conference	19
20/03/2009	Traveling home	10
21/03/2009	Open campus day (giving presentations)	4
	Updating parser to handle all the dissemination request	1
22/03/2009	Adding code for checking the amount of nodes active in the network	1
	Writing 2 wips and report on international project	
23/03/2009	Meeting with peter and testing parser with the new GUI: exception in the parser:	5
	<div> Exception in thread "Thread-6" java.lang.NumberFormatException: For input string: ">" at java.lang.NumberFormatException.forInputString(NumberFormatExcepti </div>	

	<pre> on.java:48) at java.lang.Integer.parseInt(Integer.java:447) at java.lang.Integer.parseInt(Integer.java:497) at parserxmlnew.dexml.decode(dexml.java:223) at parserxmlnew.Requesthandler.handle(Requesthandler.java:89) at parserxmlnew.Requesthandler.run(Requesthandler.java:51) at java.lang.Thread.run(Thread.java </pre>	
	Discussing future map	1
24/03/2009	<p>Research how to add power and frequency control to the telosb app, Mailing list: http://mail.millennium.berkeley.edu/pipermail/tinyos-help/2008-April/032494.html</p> <p>Meeting with Peter: Making a draft of our workplan + testing and setting up controller+GUI at desktop pc.</p> <p>Debugging parser: Dissemination works like a charm</p>	2
25/03/2009	<p>Installing doxygen + reading HOWTO + starting documenting + updating changelog on wiki</p> <p>Expanding telosb app with power and frequency control</p> <p>CC2420Packet.getPower remains 0 and not the default level 31: https://www.millennium.berkeley.edu/pipermail/tinyos-help/2007-May/025148.html</p>	3
26/03/2009	<p>Something wrong with frequency error, hasn't been implemented yet</p> <p>Meeting with peter and testing the GUI. Framework needs to be added with something that can detect failure of a node and reply on a request. Discovered that the reply message wasn't send properly to the controller (wrong socket).</p> <p>Solution is to distinguish the status message where it is coming from the type parameter of the statmsg struct. Strangest thing ever: if you send request to node 2 then type will be 4, then node 1 will have type 3, if you make request to node 1 then type will be 4 and the type of node 2 will be 3...</p>	1 6 3
27/03/2009	<p>Trying different ways to make the boot.booted execute correctly</p> <p>Trying to share data between different threads</p>	1 3
29/03/2009	Fixed the sharing between threads	3
30/03/2009	<p>Meeting with peter and fixing the status message.</p> <p>Trying to make the socket work of the parser to be able to send to the controller</p> <p>Debugging the dissemination process together with the parser</p>	5 5
31/03/2009	<p>Meeting with Peter: further debugging of parser (dissemination) and the GUI. Found solution to distinguish status messages from reboot of a mote and the reply to a request.</p> <p>Implementing "setting frequency"</p>	6
01/04/2009	<p>Linguapolis: correction paper</p> <p>Meeting with Jerry about SCALA (interface & engine)</p> <p>Meeting with peter to fix the parser and dissemination of the GUI: Finished</p> <p>Implementing setchannel for frequency: Problems (there is no communication): http://www.mail-archive.com/tinyos-help@millennium.berkeley.edu/msg08768.html: the frequency of the receiving node can't be changed, the one of the transmitting can https://www.millennium.berkeley.edu/pipermail/tinyos-help/2008-</p>	1 1 4

	March/031815.html : suggest to update the tinyos 2.x version: cvs -z3 -d:pserver:anonymous@tinyos.cvs.sourceforge.net:/cvsroot/tinyos co -dP -r tinyos-2_0_devel-BRANCH tinyos-2.x Doesn't change anything	
02/04/2009	Tried again update my tinyos 2 to check if something went wrong. http://www.mail-archive.com/tinyos-help@millennium.berkeley.edu/msg05371.html : suggested to turn of the radio before you apply change to the frequency this works. Then I noticed that the button of the root wasn't enabled and the root doesn't apply to the broadcast address so the root was never set to the new frequency + helping peter set up the parser in vmware. Reading paper about self calibration protocol for WSN localization Fixing set power: not so stable	8 1 1
03/04/2009	Going to school for an update about SCALA + start writing comments with my code (parser)	4
07/04/2009	Further commenting code (parser)	2
08/04/2009	Further commenting code (parser & telosb app)	3
09/04/2009	Further commenting code (telosb app) Starting document documentation	1 3
14/04/2009	Reading papers about WPNC	4
15/04/2009	Continuing with writing documentation about the telosb app Meeting with peter about progress engine adapter	3 1
16/04/2009	Continuing with documentation	3
19/04/2009	Documentating	1
21/04/2009	Finishing documentation of the telosb application Fixing bug in parser and telosb app WIP	5 1 1
22/04/2009	Writing international project report WIP with jeroen doggen. Meeting with peter	5 2 1
23/04/2009	Updating wiki + sourceforge + research fields + writing wip Reading papers about RSSI	2 5
24/04/2009	Propagation models	7
26/04/2009	Different propagation models + statistical	3
27/04/2009	Meeting with peter: planning schedule + going over controller and the positioning classes + testing framework Statistical localization	5 3
28/04/2009	Reading about an algorithm with hop count + reading papers with statistical based localization calibration	6 2
29/04/2009	Reading papers: RSS self-calibration protocol for wsn localization... + deterministic methods	8
30/04/2009	Test phase of scale with wsn engine (was cancelled); meeting with jerry about problem: what if point is outside the map Meeting with Fre & Jeroen about buying antenna's for the telosb nodes Discussing algorithm of the paper automated calibration and RSS-Based Reading about maximum likelihood + Location Estimation with unknow pathloss model. Thought of a good idea that combines proximity and ranging Meeting with jeroen about our idea	1 1 6 1
01/05/2009	Small meeting with peter about planning	1

03/05/2009	Planning adjustments to the framework to implement calibration and dv-hop algorithm Ranging (distributed)	
04/05/2009	Going over calibration and algorithms with peter: going to use centralized + start implementing + planning adaption framework	8
05/05/2009	Writing telosb app WIP with jeroen about research topics	8
06/05/2009	Meeting with peter about adapting database to include calculated coordinates	8
07/05/2009	Refreshing pointer knowledge + Adding linked list, problem only one element is stored + starting on trilateration	8
08/05/2009	Writing trilateration + fixing linked list: nesc didn't apply a new value to a variable in the receive event, very strange... But fixed. + debugging algorithms with peter	8
10/05/2009	Finishing telosb app with linked list + checking math for trilateration	4
11/05/2009	Debugging trilateration, found the algorithm to be uncorrect: writing new one	8
12/05/2009	Debugging and implementing trilateration + POCA introduction + ordering new antenna connectors + Updating parser to new xml scheme Adding support for odd situations to trilateration + writing wip	9 2
13/05/2009	Researching trilateration rare conditions	8
14/05/2009	Implementing solution for rare situations	8
15/05/2009	Problem telos instable	8
16/05/2009	Testing dissemination with new xml message (network problems)	2
17/05/2009	Fixing network problem and bugs in telosb app	5
18/05/2009	Writing algorithm expanded minmax and trilateration Debugging	2 6
19/05/2009	Trilateration debugging	7
20/05/2009	Minmax debugging	8
21/05/2009	Expanding parser with timer and status message	8
22/05/2009	Stabilizing program	8
23/05/2009	Testing orientation influence	4
24/05/2009	Getting outdoor & indoor positioning information	24
25/05/2009	Writing paper	12
26/05/2009	Fixing bugs that made the program not to store the data	8
27/05/2009	Preparation WTCI + fixing some bugs out off our application + adding WCL algorithm	18
28/05/2009	Beurs metropolis	13
29/05/2009	Testing outdoor: failed	4
01/06/2009	Adding functionality to telosb: removing old nodes from list Adding new component for calibration Testing indoor	1 2 4
02/06/2009	Reading about least squares and looking for library	8
03/06/2009	Going through the controller and adding functions for calibration	8
04/06/2009	Improving ranging with least squares	8
05/06/2009	Improving trilateration with least squares	8
06/06/2009	Fixing latex	3
07/06/2009	Correcting paper	6
08/06/2009	Correction paper	6
09/06/2009	Making portfolio	8
10/06/2009	Fixing bug with least square solution for the calibrarion and trilateration	10

11/06/2009	Meeting with peter about planning: testing outside rain...	5
12/06/2009	Testing outdoor: accuracy of algorithms	8
13/06/2009	Evaluating data from tests	8
14/06/2009	Presentation and fixing couple of bugs and further evaluating data	20
15/06/2009	Presentation and preparations	8
16/06/2009	Making portfolio	12