

Distributed Software Development



13-11-28



The Development Group

Real-Time Bridge Monitoring

Alpha prototype



Overview



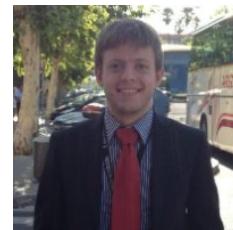
- Current Project Status
- Project Organization
- Experiences
- Alpha prototype demo
- Future development



Team Organization



- The Development Group



Andrea Bottoli (PoliMi) Lorenzo Pagliari (PoliMi) Marko Brčić (FER) Ghazaleh Shojaee Nia (PoliMi)



Dzana Kujan (MDH) Jörn Tillmanns (MDH)

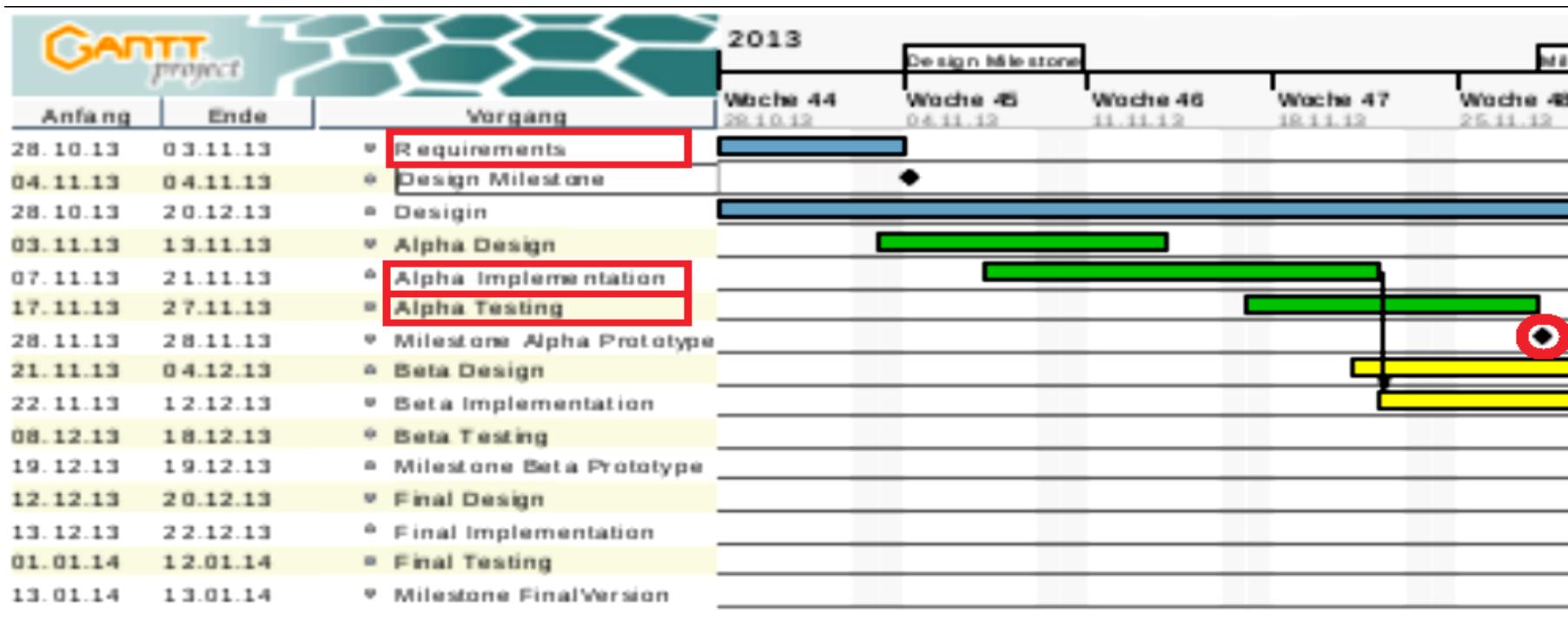
Miraldi Fifo (MDH)

Nikola Radisavljevic (MDH)

Current Project Status



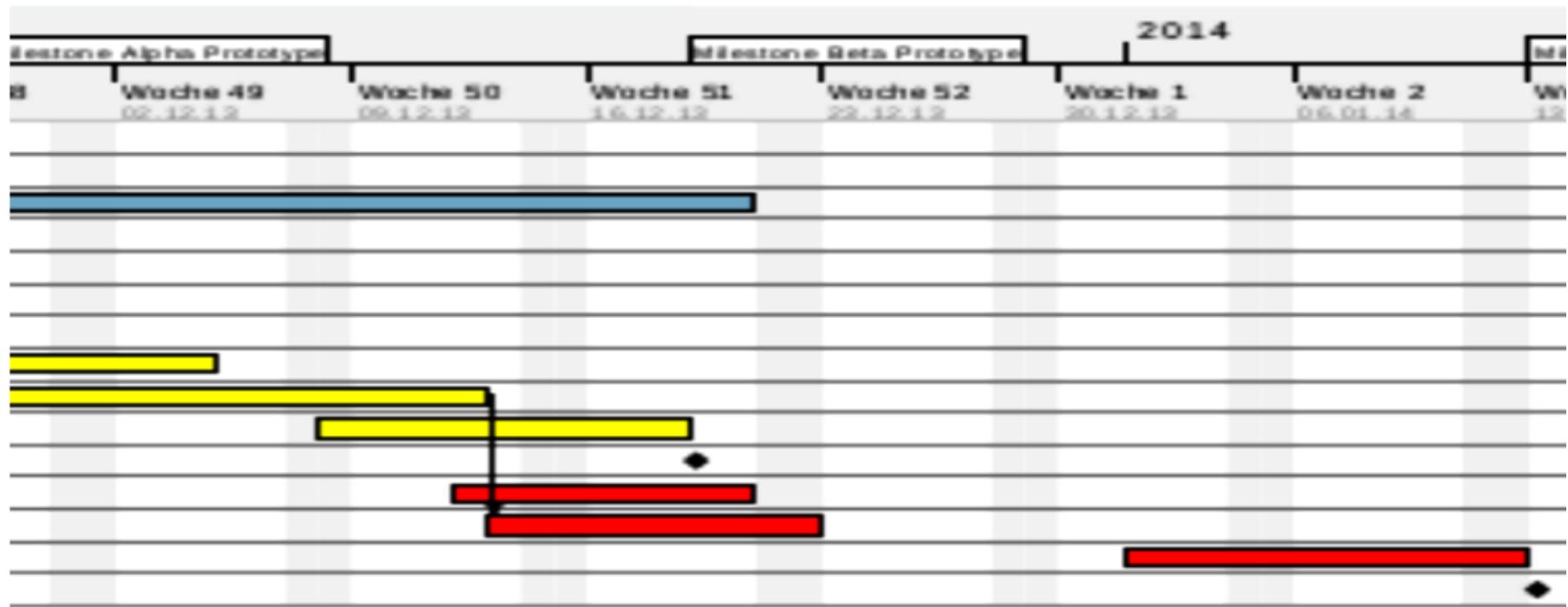
- Project development process
 - Initial plan



Current Project Status



- Project development process
 - Initial plan



Current Project Status



- Project plan, Alpha prototype
 - Complete database implementation
 - Complete parser
 - Connection with front end

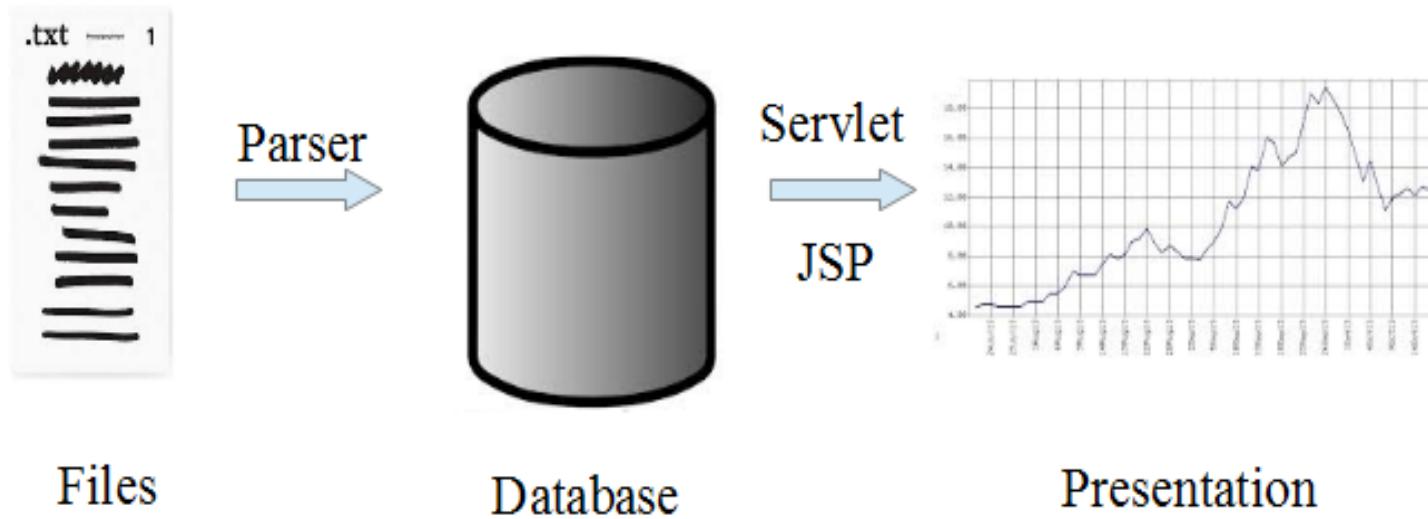
Current Project Status



- Status of the Alpha prototype
 - Database implementation
 - Scheduler: periodically calls the parser
 - Parser: parses the .txt files (and does needed conversions) + stores in database
 - Webpage: design/layout, Current State View, Parameters View
 - Website is running on the VM
 - Acceptance test



Current Project Status



Current Project Status

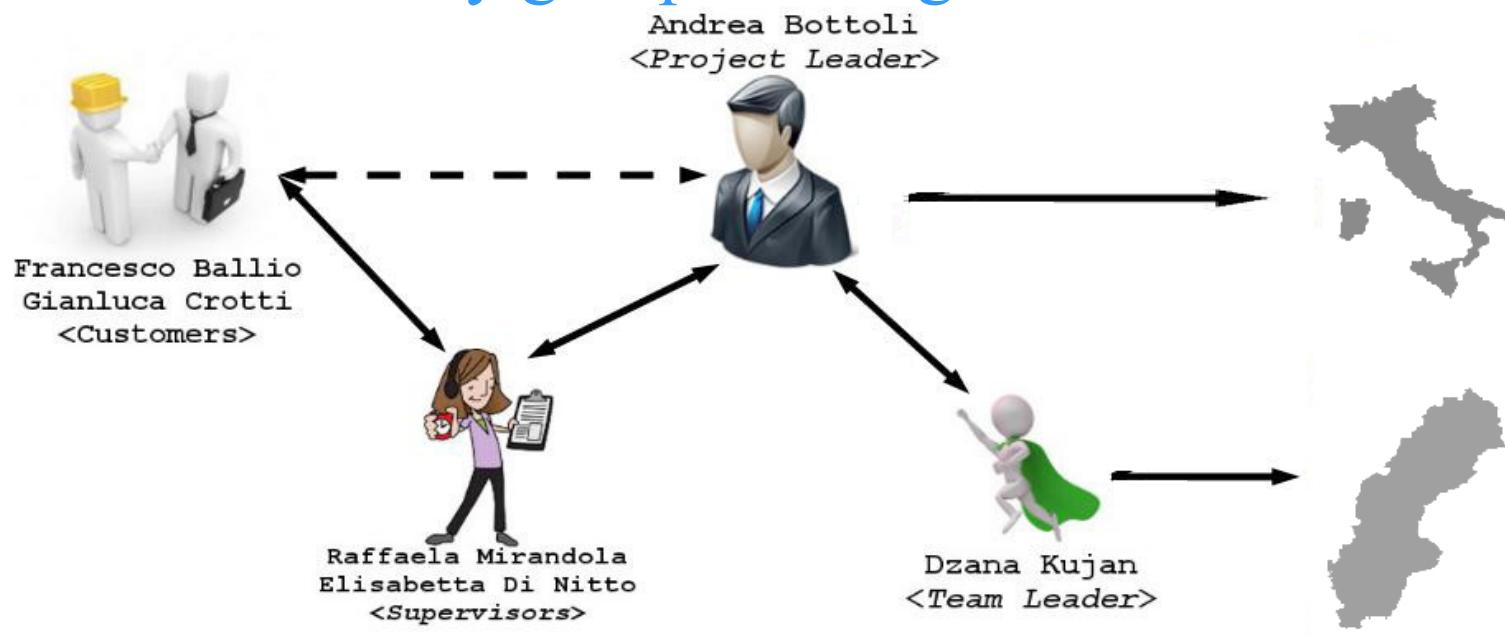
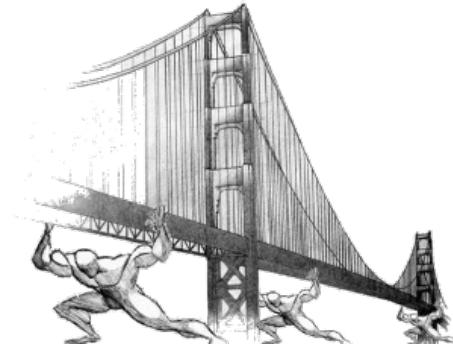


- Effort so far

Member	W42	W43	W44	W45	W46	W47	Total
Andrea Bottoli	11	40	50	45	47	68	261
Lorenzo Pagliari	10	37	53	51	46	57	254
Dzana Kujan	9	36	43	36	27	36	187
Marko Bracic	11	40	54	60	28	36	229
Jorn Tillmanns	9	37	51	43	20	13	173
Nikola Radisavljevic	9	37	45	36	26	35	188
Miraldi Fifo	9	38	45	35	16	28	171
Ghazaleh Shojaee	-	-	53	13	32	26	124
Total	68	265	394	319	217	274	1587

Project Organization

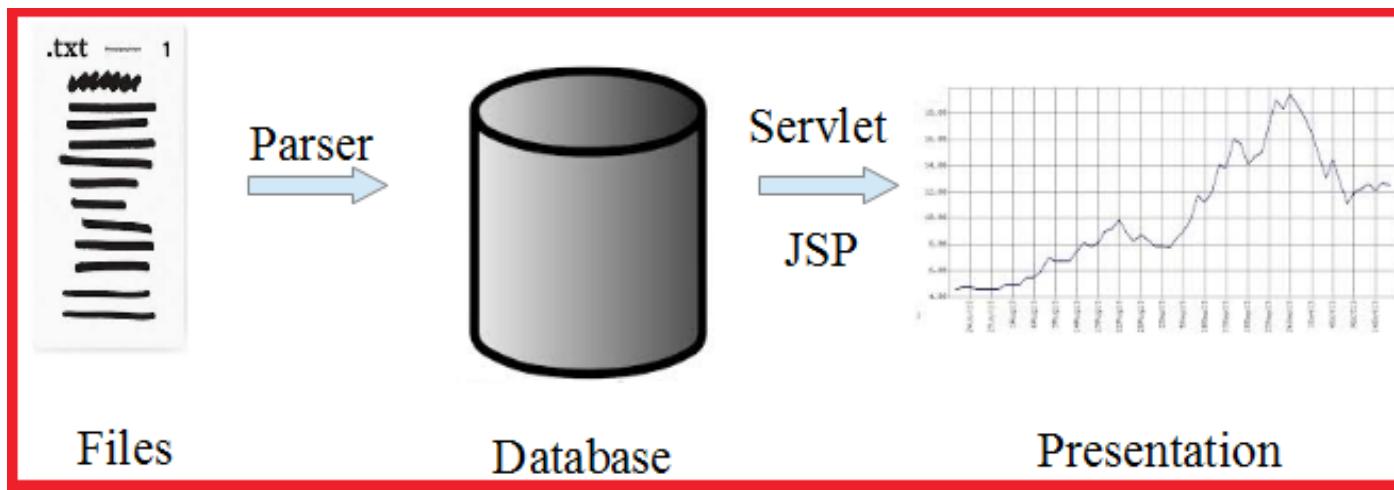
- Meetings and communication
 - Weekly meeting with customer, and supervisor
 - Project manager and team leader weekly meeting
 - Two weekly group meetings



Work distribution



Andrea Bottoli (PoliMi)



Work distribution



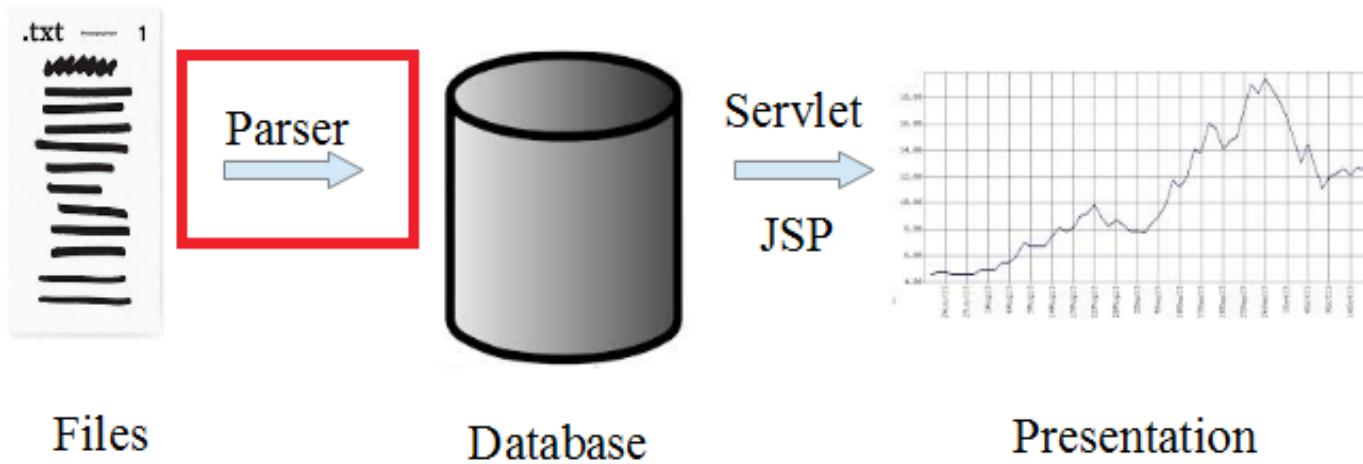
Marko Brčić (FER)



Lorenzo Pagliari (PoliMi)



Jörn Tillmanns (MDH)



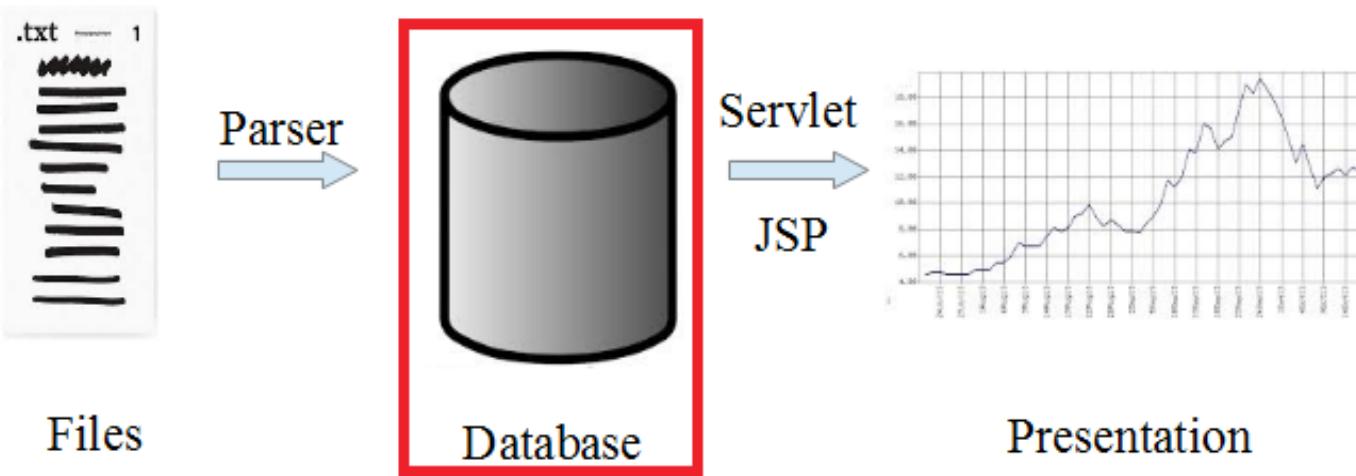
Work distribution



Marko Brčić (FER)



Jörn Tillmanns (MDH)



Work distribution



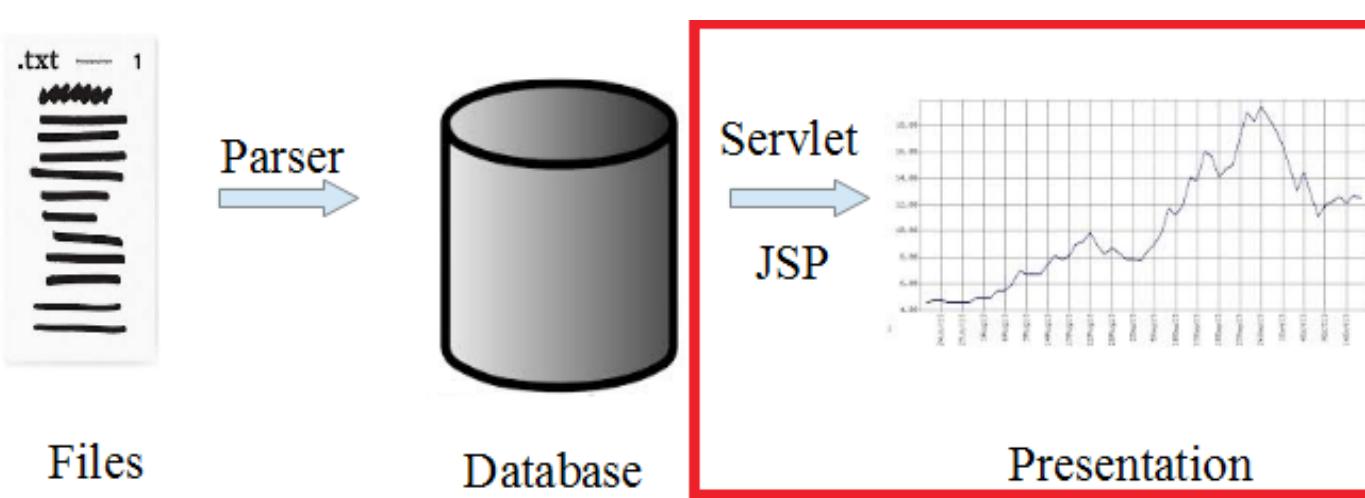
Dzana Kujan (MDH)



Nikola Radisavljevic (MDH)



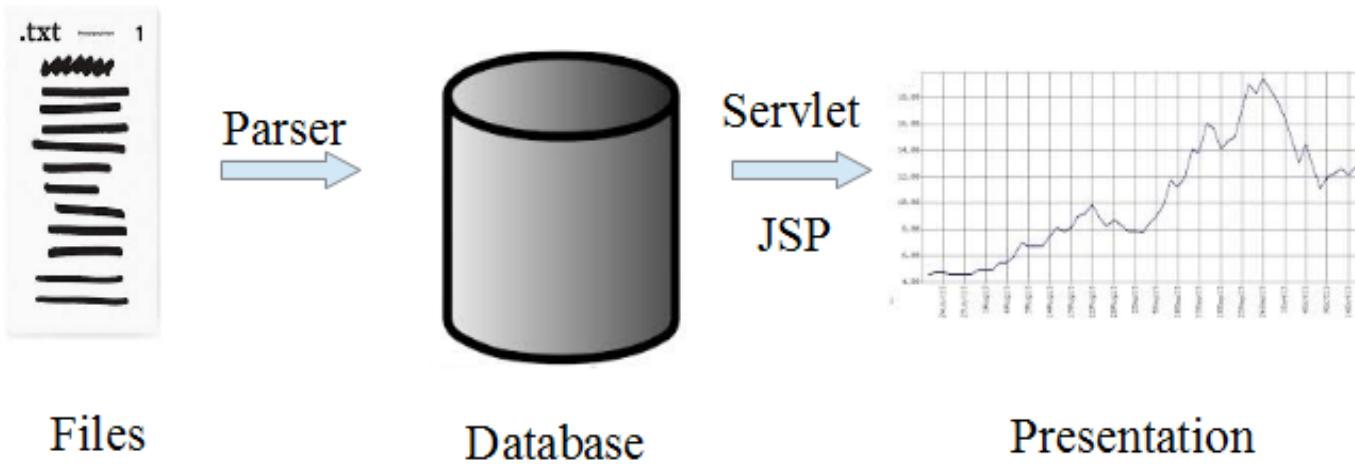
Miraldi Fifo (MDH)



Work distribution



Good system design, and good communication leads to easy separation of work and easy integration :)



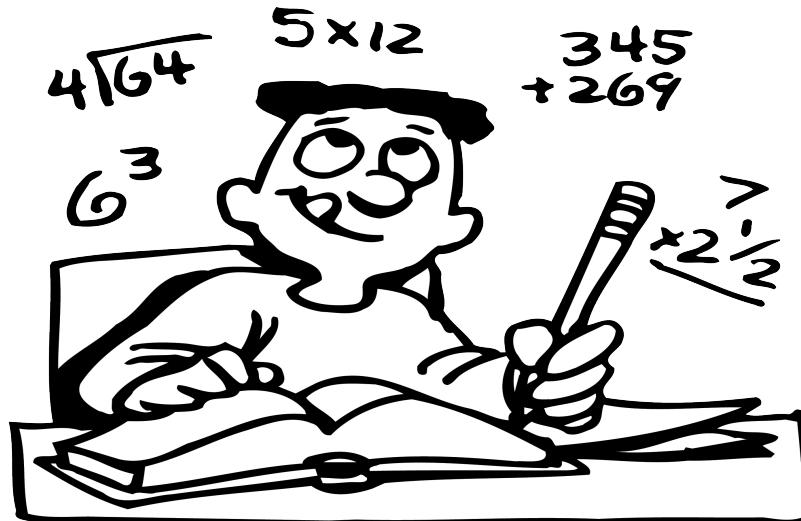
Work distribution



Lorenzo Pagliari (PoliMi)



Ghazaleh Shojaee Nia (PoliMi)

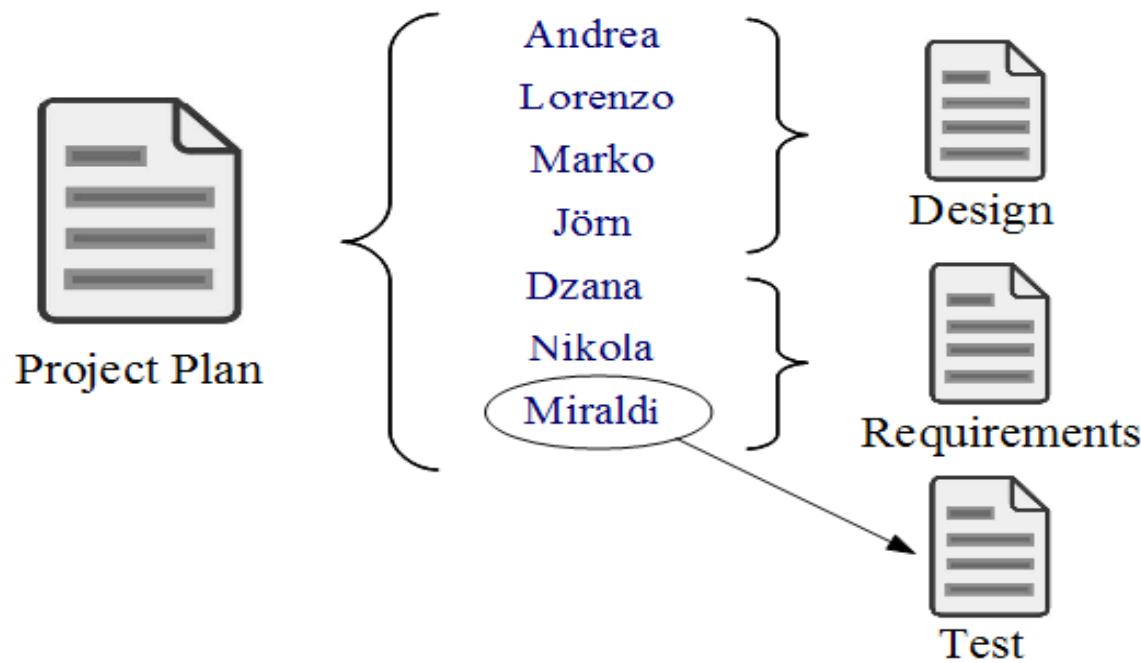


Math engine

Work distribution



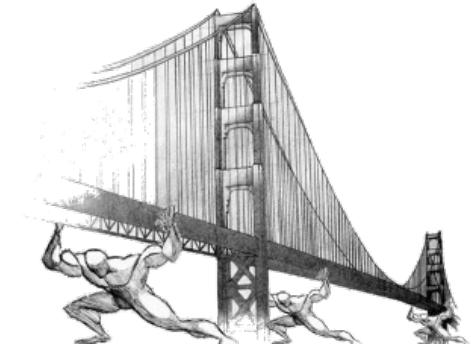
- Documentation



- Constant update of documents
- Quality: Peer review

Project Organization

- Tools used
 - Google Hangout
 - Skype
 - Git
 - Plug-ins for Eclipse:
 - Mylyn
 - Egit



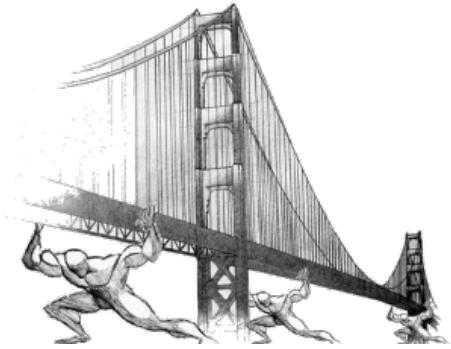
Experiences



- Issues
 - Communication
 - Management
 - Ineficient meetings
 - Technologies not familiar to all
 - Setting up environment
 - Being late for meetings
- Solutions
 - Additional Meetings
 - Tasks on github
 - Meeting agenda introduced
 - Additional hours spent on learning
 - Helping each other :)
 - Chocolate penalties :)

Experiences

- Unanticipated risks
 - Documentation in Italian (40 pages, and counting...) --> all translated by Lorenzo
 - Far more complex calculations than expected
 - Still receiving requirements from customer



Experiences



- Positive experiences
 - Team work
 - Fun meetings :)
 - Everyone is doing a hard work and trying to do the best they can
 - Improved skills and distributed development experience
 - Good collaboration



Alpha prototype demo



- Analog files

1	2	3	4
0.004084	0.009941	0.016329	3383654135.706232
0.004115	0.009880	0.016406	3383654136.083255
0.004139	0.009904	0.015424	3383654137.083110
0.004105	0.009917	0.015379	3383654138.083105
0.004243	0.009853	0.016753	3383654139.083105
0.004333	0.009879	0.017699	3383654140.083101

Alpha prototype demo



- Echo sonar files

R2.19	3383654136
R2.19	3383654136
R2.19	3383654137

Alpha prototype demo



- Database

ID	wind_speed	wind_direction	hydrometer	sonar	sonar_type	timestamp
777	1.82625	283.027	17.1925	10.14	1	2011-03-22 16:08:32
778	1.87875	294.547	17.2175	10.13	1	2011-03-22 16:08:33
779	1.35375	289.552	17.2038	10.13	1	2011-03-22 16:08:34
780	1.72125	290.092	17.21	10.17	1	2011-03-22 16:08:35
781	1.6875	285.84	17.19	10.14	1	2011-03-22 16:08:36
782	1.61625	310.837	17.1963	10.13	1	2011-03-22 16:08:37
783	1.8675	273.172	17.2488	10.13	1	2011-03-22 16:08:38
784	1.78125	293.242	17.2437	10.13	1	2011-03-22 16:08:39
785	1.905	281.205	17.2262	10.13	1	2011-03-22 16:08:40
786	2.05125	299.633	17.2013	10.13	1	2011-03-22 16:08:41
787	2.1975	291.555	17.19	10.14	1	2011-03-22 16:08:42
788	2.265	289.237	17.2062	10.13	1	2011-03-22 16:08:43
789	2.37375	284.355	17.205	10.13	1	2011-03-22 16:08:44
790	2.43375	284.737	17.2563	10.13	1	2011-03-22 16:08:45
791	2.655	283.95	17.18	10.13	1	2011-03-22 16:08:46

Alpha prototype demo



Live demo :)

<http://161.53.67.134/BridgeMonitoring/>

UserName:

Password:

Real-time bridge monitoring



[Home](#) [Current State](#) [Parameters](#) [History Diagrams](#)

Actual Values

Anemometer: 0.315 m/s

Sonar: 2.19 m

Hydrometer: 17.28625 m



Last 24 hours trend:

Wind Speed Graph:

4.0

Hydrometer Graph:

17.300

UserName:

Real-time bridge monitoring

Password:



[Home](#)

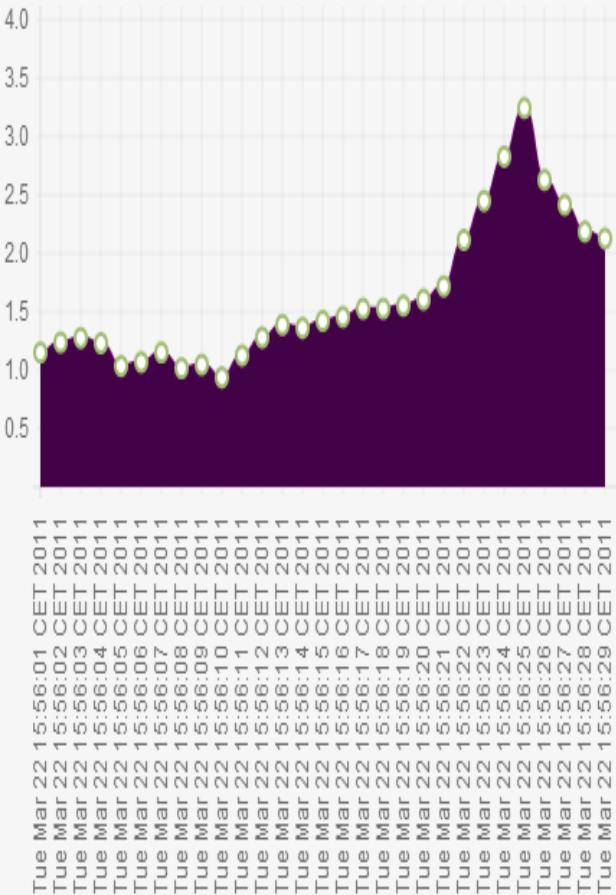
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[Parameters](#)

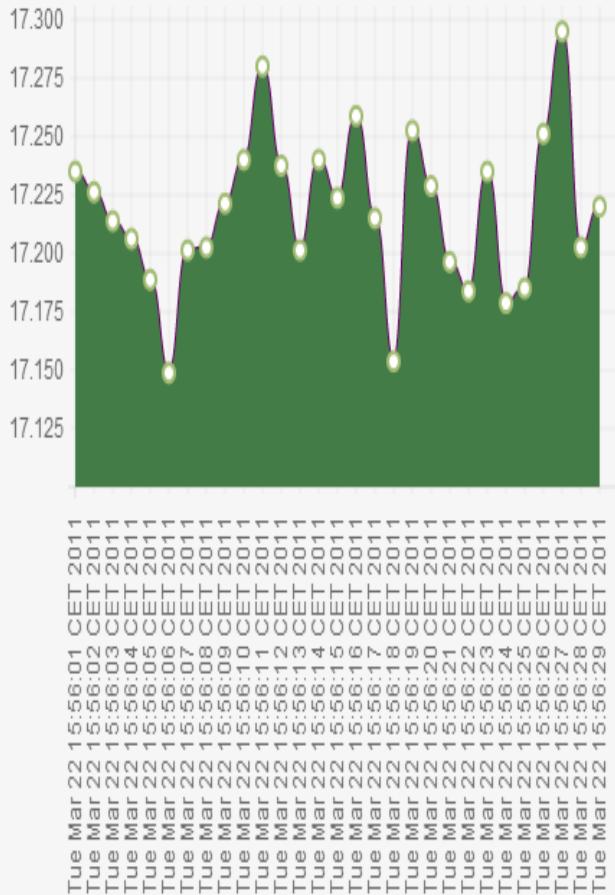
[History Diagrams](#)

Last 24 hours trend:

Wind Speed Graph:



Hydrometer Graph:



Sonar Graph:

UserName:

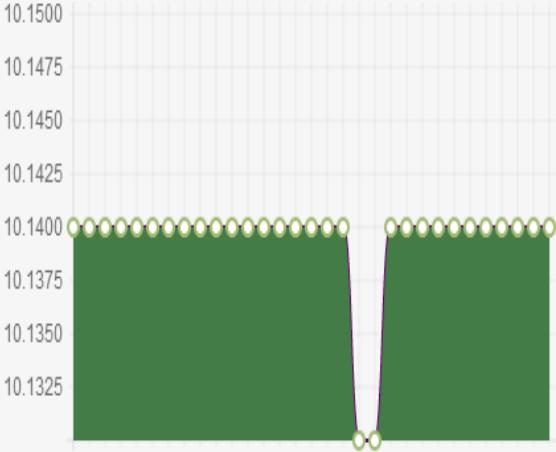
Password:

Real-time bridge monitoring



[Home](#) [Current State](#) [Parameters](#) [History Diagrams](#)

Sonar Graph:



Tue Mar 22 15:56:00 CET 2011
Tue Mar 22 15:56:01 CET 2011
Tue Mar 22 15:56:02 CET 2011
Tue Mar 22 15:56:03 CET 2011
Tue Mar 22 15:56:04 CET 2011
Tue Mar 22 15:56:05 CET 2011
Tue Mar 22 15:56:06 CET 2011
Tue Mar 22 15:56:07 CET 2011
Tue Mar 22 15:56:08 CET 2011
Tue Mar 22 15:56:09 CET 2011
Tue Mar 22 15:56:10 CET 2011
Tue Mar 22 15:56:11 CET 2011
Tue Mar 22 15:56:12 CET 2011
Tue Mar 22 15:56:13 CET 2011
Tue Mar 22 15:56:14 CET 2011
Tue Mar 22 15:56:15 CET 2011
Tue Mar 22 15:56:16 CET 2011
Tue Mar 22 15:56:17 CET 2011
Tue Mar 22 15:56:18 CET 2011
Tue Mar 22 15:56:19 CET 2011
Tue Mar 22 15:56:20 CET 2011
Tue Mar 22 15:56:21 CET 2011
Tue Mar 22 15:56:22 CET 2011
Tue Mar 22 15:56:23 CET 2011
Tue Mar 22 15:56:24 CET 2011
Tue Mar 22 15:56:25 CET 2011
Tue Mar 22 15:56:26 CET 2011
Tue Mar 22 15:56:27 CET 2011
Tue Mar 22 15:56:28 CET 2011
Tue Mar 22 15:56:29 CET 2011
Tue Mar 22 15:56:30 CET 2011

UserName:

Password:

Real-time bridge monitoring



[Home](#)

[Current State](#)

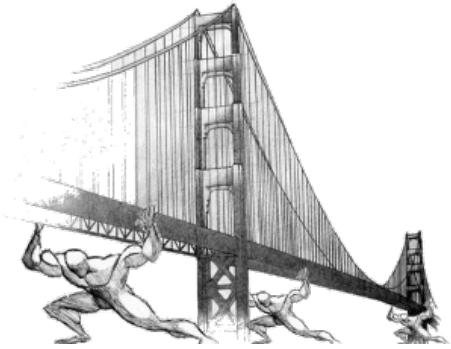
[Parameters](#)

[History Diagrams](#)

Current valid parameters

Parameter Data ID:	Parameter ID:	Name:	Abbreviation:	Unit:	Category:	Value:	User ID:	Time stamp:
116	113	arm for the vehicle braking moment	n	m	ShiftingWeights	3.3	1	Wed Nov 20 09:03:02 CET 2013
115	112	Value of the force due to the vehicle braking	Fr	kN	ShiftingWeights	206.0	1	Wed Nov 20 09:03:01 CET 2013
106	103	Axial load for load combination A1	N(A1)	kN	VehicleBreaking	4024.0	1	Wed Nov 20 09:03:01 CET 2013
109	106	Axial load for load combination A2	N(A2)	kN	VehicleBreaking	3116.0	1	Wed Nov 20 09:03:01 CET 2013
112	109	Axial load for load combination A3	N(A3)	kN	VehicleBreaking	1979.0	1	Wed Nov 20 09:03:01 CET 2013
107	104	Bending moment xx for load combination A1	Mxx(A1)	kNm	VehicleBreaking	4368.0	1	Wed Nov 20 09:03:01 CET 2013
110	107	Bending moment xx for load combination A2	Mxx(A2)	kNm	VehicleBreaking	8077.0	1	Wed Nov 20 09:03:01 CET 2013
112	110	0101.0	1	Wed Nov 20 09:03:01

Future development



- The beta prototype:
 - Math engine + graphs + safety factor
- The final product:
 - all the features, login for different users
- Final documentation + user manual + installation manual + final archive that contains both the product and the installation & configuration files

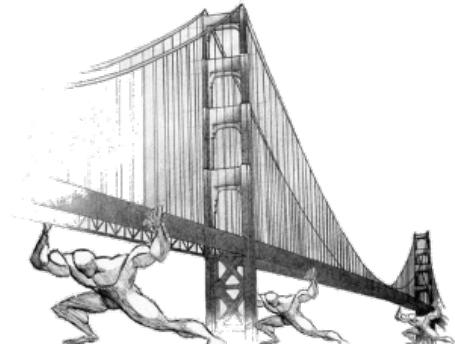
Conclusion



- Current Project Status
- Project Organization
- Experiences
- Alpha prototype demo
- Future development
- -->On track and satisfied team :)

Question Time





Thank you for your attention

