

Car Gossip	Version: Final
Project Plan	Date: 2012-01-18

# **Car Gossip Project Plan**

**Final version**

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## Revision History

Date	Version	Description	Author
2012-10-23	0.1	Initial Draft	David Reypka
2012-11-01	1.0	First version	David Reypka
2012-11-18	1.1	First revision	Nikola Vranešić
2012-01-18	Final	Final version	Achille Penna

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## Introduction

### Purpose of this document

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This document is meant to provide a general overview of the Car Gossip project, which will be developed within the Distributed Software Development (DSD) course. The project is meant to be developed in a distributed manner by a team composed of students coming from universities of Mälardalen (Västerås, Sweden) and Zagreb (Croatia).

Besides the prescribed DSD course purposes, a further aim is to employ the outcomes of the project to participate in the SCORE contest at the ICSE 2013 in San Francisco. Therefore the project and its outcomes will be designed and developed with the regulations of the contest in mind.

It is the basis for all the other documents that will be provided throughout the project. In other words, with this document we outline the workflow of the coming tasks and provide a possible timeline and workload distribution for the whole project. Since the project development is an iterative process, this document is meant to be revised after the completion of each main milestone and in any case until the final product is completed.

### **Intended Audience**

The Project and Team Leaders should use this document to define how to organize the workload and describe the necessary steps to fulfill the project goals and expectations. It provides a timeline to determinate the current state of the project and a guideline for the team members.

The Supervisor uses this document to follow the planned development of the project in order to be able to support the project team members in their work and eventually evaluate the project results.

The document may also serve as a description of the internal structure of the project and provide an organizational perspective of the project as a whole.

### **Scope**

This document defines the planned approach and work needed to accomplish the project goal. Detailed work delegation and time schedule are defined using tables to graphically present the planned workflow. The workflow is divided into 3 week cycles and after each cycle a new version of the project product is released.

The requirements and functionalities are not covered in this document, since they are covered in the Requirements Definition document. The development and implementation details are not covered in this document, since they are covered in the Design Description document.

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## Definitions and acronyms

Acronym or abbreviation	Definitions
ETHZ	Federal Institute of Technology Zurich
FER	Faculty of Electrical Engineering and Computer Science
DSRC	Dedicated short range communication
GPS	Global Positioning System
App	Application
SCRUM	An agile software development method for project management

## Definitions

Keyword	Definitions
Gossip	A message containing information about the cars position and movement.
Alert	A default message sent by drivers to inform others of the traffic status.

## References

NS-2 movement format files, Kai Nagel, Bryan Raney and Hinnerk Spindler, ETHZ Swiss Database, <http://www.lst.inf.ethz.ch/research/ad-hoc/car-traces/>  
DSRC, [http://en.wikipedia.org/wiki/Dedicated\\_short-range\\_communications](http://en.wikipedia.org/wiki/Dedicated_short-range_communications)  
GPS, [http://en.wikipedia.org/wiki/Global\\_Positioning\\_System](http://en.wikipedia.org/wiki/Global_Positioning_System)  
SCRUM, [http://en.wikipedia.org/wiki/Scrum\\_development](http://en.wikipedia.org/wiki/Scrum_development)

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## 1. Background and Objectives

The main goal of this project is to provide a simulation of a message-based information exchange for vehicular traffic. The aim is to enrich the information that the driver has at his disposal regarding traffic conditions, hinders and generally his surroundings.

Such information can be provided through different means, mainly by visualizing other cars in the driver's surroundings on a map using the information from Gossips (car ID, GPS coordinates, speed, velocity) received via DSRC.

The system will also enable the driver to send and receive Alerts regarding traffic-related events (car crash, street closed for repair etc.). The driver will be able to report those events and distribute them via DSRC to other vehicles within reach.

Moreover, the messages (Gossips and Alerts) are stored in a database which is connected to a web service that is able to exploit them in order to provide predictions regarding traffic-related events. Such predictions will be distributed in the same way as for custom messages in the surrounding area via DSRC.

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## 2. Organization

### Project group

Name	Initials	Responsibility (roles)
David Reypka	DR	Project (team) leader, Documentation
Mohammed Alserr	MA	Testing leader, Persistence manager
Achile Penna	AP	Requirements engineering, Architecture manager
Nikola Vranešić	NV	Team Leader, GUI manager
Matija Korpar	MK	Lead developer, Algorithm leader
Dino Jurina	DJ	Protocolist, SVN manager

### Customer

DSD Course Teachers  
SCORE Contest Committee

### Supervisor

Federico Ciccozzi

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### 3. Development process

The Car gossip project will be developed following a SCRUM-like process through an iterative and incremental agile software development method. There are three core roles: product owner, scrum master and the development team.

The product owner is responsible for prioritizing work on the product and is a good communicator. David Reyпка is the product owner in the Car gossip project since he is also the Project Leader.

The scrum master is responsible for supporting the Scrum Team, coaching and guiding them through this process, and removing any impediments blocking their progress. Nikola Vranešić is the scrum master in the Car gossip project.

All the team members of the project represent the development team which is responsible for delivering a potentially shippable product that is enhanced at the end of each Sprint.

“A sprint is the basic unit of development in Scrum. Each sprint is preceded by a planning meeting, where the tasks for the sprint are identified and an estimated commitment for the sprint goal is made, and followed by a review or retrospective meeting, where the progress is reviewed and lessons for the next sprint are identified. During each sprint, the team creates finished portions of a product. “

by Kelly Waters, 14 September 2007  
How To Implement Scrum in 10 Easy Steps

This projects sprint duration is 3 weeks. After each sprint the team presents a new version of the product (alpha, beta and final). The sprint overviews are defined in the deliverables.



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#### 4. Deliverables

To	Output	Planned week	Promised week	Late +/-	Delivered week	Rem
Customer	Project Plan (v.1)	W44	W44	-	W44	PDD
Customer	Requirements Definition (v.1)	W44	W44	-	W44	RDD
Customer	Design Description (v.1)	W45	W45	-	W45	DDD
Internal	Open Data Source	W47	W47	-	W47	ODS
Internal	Desktop App	W47	W47	-	W47	DA
Internal	Android App	W47	W47	+5	W50	AA
Customer	Alpha Prototype	W48	W48	-	W48	APT
Internal	Web Server	W50	W50	+5	W03	WS
Internal	Web App	W50	W50	+5	W03	WA
Customer	Beta Prototype	W51	W51	-	W51	BPT
Customer	Acceptance Test Plan	W01	W01	+1	W02	ATP
Customer	Test Report	W03	W03	-	W03	TR
Customer	Final Project Report	W03	W03	-	W03	FPR
Customer	Final Product	W03	W03	-	W03	FP

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### 5. Inputs

From	Required item	Planned week	Promised week	Late +/-	Delivered week	Rem
ETHZ	NS-2 movement format files	W44	W44	-	W44	MF
FER	Virtual Machine	W44	W44	-	W44	VM

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## 6. Project risks

Likelihood	Risk	Preventive action
High	Insufficient timeframe	Set up a manageable Project Plan and use Agile development strategies.
High	Miscommunication	Constant communication through several channels between the two groups. High information flow between Team Leaders.
Medium	Lack of knowledge in used technologies	Decide on technologies the majority is familiar with.
Medium	Integration of different components not manageable	Define strict interfaces. Clear definition of component functionalities.
Medium	Unsupported internal car devices	Provide interfaces for the implementation. Divide logic in components.
Medium	Unspecific software design	Agile and iterative design and development
Medium	Too ambitious requirements	Discuss requirements in detail with the team and the supervisor
Low	Rivalry between coworkers	Mutual agreement on design/development topics. Team and Project Leader can resolve discrepancies.

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## 7. Communication

### Personal meetings

Personal meetings are only possible for the subgroup studying at Mälardalens University and the other subgroup from the University of Zagreb. Meetings in person will be held once a week, if a personal discussion is required.

### Skype

There are two weekly meetings, approximately 2 hours each, scheduled for a group discussion through chat. Those will occur on Thursday and Sunday.

The Project leader is guiding the discussion and provides the main topics.

For each meeting a Minutes-of-meeting document will be written by the Protocolist.

These documents will be made available on the project SVN.

Outside of the meetings, the group can spread out important information and subgroups can communicate and synchronize their workflow.

### Google Drive

To develop every kind of documentation and presentation, Google Drive will be used as platform to work simultaneously on these files.

There is a shared folder where every team member and the supervisor have access to.

### Google Groups

For discussions outside of the meetings and to publish ideas to the other project members, Google Groups is provided as a discussion platform.

### Google Calendar

Google Calendar is used to set appointments and reminders for everyone.

### Email

For important information emails can be sent through a mailing list of all the project members.

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## 8. Configuration management

A SVN system will be used throughout the project to ease collaborative development. The SVN manager is responsible for guidelines and regulations regarding the use of such system.

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## 9. Project plan

### Time schedule

Id	Milestone Description	Responsible Dept./Initials	Finishe d week			Metr.	Rem.
			Plan	Forec ast	Actual		
				Week +/-			
M001	Architecture Draft	NV	W43	W43 0	W43		
M002	Project Plan	DR	W44	W44 0	W44		
M003	Requirements Definition	AP	W44	W44 0	W44		
M004	Design Description	NV	W45	W45 0	W45		
M005	Alpha Version	MK	W47	W47 0	W47		
M006	Beta Version	MK	W51	W51 0	W51		
M007	Test Report	AP	W03	W03 0	W03		
M008	Final Version	MK	W03	W03 0	W03		

### Activity plan

ID	Predecessor	Activity	Days	Mdays	Rem.
1		Architecture Draft	3	18	
2	1	Project Plan	3	6	
3	1	Requirements Definition	3	6	
4	2, 3	Design Description	5	20	
5	3	Open Data Source	7	7	
6	4, 5	Desktop App	14	30	
7	4, 6	Android App	14	18	
8	5, 6, 7	Alpha Version	7	42	
9	8	Web Server	14	42	
10	8, 9	Web App	14	42	
11	8, 9, 10	Beta Version	7	42	
12	11	Component refactoring	7	14	
13	4, 12	Documentation revision	7	14	
14	12	Acceptance Test Plan	7	7	
15	14	Test Report	7	7	
16	12, 15	Final Product	14	84	

Planned effort (days)	Planned effort (man-days)
133*	399*

\* Since this is not the only course that is taken during the semester a man day is accounted to 50% of a regular working day, which amounts to 4 hours per day.