

Whitepaper 1.1 (English version)

# Sherpa

## hiking information system

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This document is the strategy document for the development of the Sherpa webservice.

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## Introduction

This document is based on the Norwegian version of the document and rewritten to have a more general appeal for associations similar to the Norwegian hikers association and its local membership organizations. Writers of the document are mainly Ragnvald Larsen and Sander Alten.

The Norwegian Mountain Hikers Association (Den Norske Turistforening – DNT) is a national non-governmental organization in Norway. DNT is the mother organization of almost 50 local hiking associations in Norway. Trondhjems Turistforening (TT) is one of these associations. Sherpa was originally developed by TT and is now being adopted by DNT.

The goal of the Sherpa software is to supply hikers with a tool for planning hiking.

The goal of this document is to map limitations and unclear parts of the project. The solutions described and ambitions laid before us are not finite. Discussion about the referred is requested. A forum is available on this webpage.

[http://sourceforge.net/forum/?group\\_id=6360](http://sourceforge.net/forum/?group_id=6360)

Access to internal discussion forums is available upon registration at <http://sourceforge.net> and by request.

Propositions on change will be fetched in [sherpa.sourceforge.net](http://sherpa.sourceforge.net) and included into this document.

The work is coordinated via <http://sourceforge.net>. This is a free project administration tool most applicable to this project.

## Information basis

How is it possible to give good information about hiking possibilities. Traditionally this has been done via yearbooks, both local and more national oriented books. In addition of giving the reader a better hiking experience, a book will also give the reader a reading experience.

With Sherpa we first wanted to give the hiking associations of Norway a free tool to communicate hiking possibilities to the users. The ambition is not to communicate a reading experience, but rather to provide the user with an information space suitable to provide a good hiking experience.

In this document we will elaborate today's possibilities and the plans for further development. We want to show how Sherpa as a tool will supply a good way of getting information about places to sleep (cabins) and route information both for local and national hiking associations.

## Development of the society / system definition

To this day most information related to hiking has been published through books. This is especially true for national hiking associations where yearbooks and other more specialized publications have provided the information. This means that the information is static. Changes on routes, cabins, etc... are only updated when economy allows for new publications; not every year.

In addition it has now become normal to have webpages where information is published. This is often done by a devoted person in local associations. However, the results are varying in quality.

The main problem is the lack of systematical information. Updating routines are slack and irregular, and often demands high technical skills and effort from the responsible people. From the user's point of view this is not optimal as there seldom is any standards for providing the information.

The information needed for planning a hike, or during a hike, may these days be made available via internet. The development will within few years make it possible to communicate with handheld units practically from every spot on the earth's surface. For better or worse the most remote areas will be available – via communication devices.

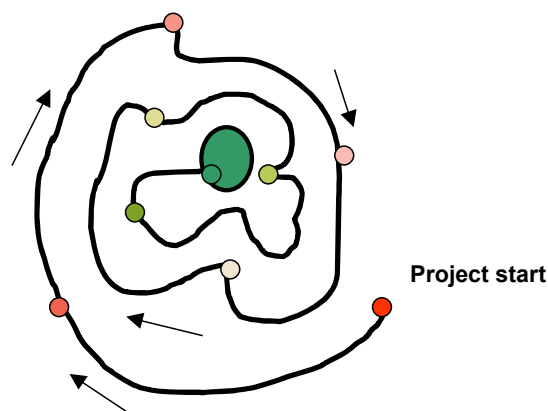
The overall use of internet as an information channel also speaks for using internet as a channel of publishing hiking information.

To deal with the potential problems of diverse standards of conveying such information this initiative is meant to be an offensive strategy initiated by the Norwegian Mountain Hikers Association for the betterment of other hikers and hiking associations.

## Building an information system

Building an information system puts demands on the developer's knowledge of the potential users needs and wishes regarding this system. The system described does not currently exist in its mature form, it will be built step by step.

This is a process starting by making small scale solutions which are then evaluated and subject to further development. This developing strategy allows for mistakes both by the users and the information owners. In other words – it is possible to make many small mistakes and be able to learn, instead of making one big mistake and not have the resources left to learn from this mistake. Hiring an internet consultant company to do the job is one such potentially BIG mistake.



**Figure 1:** *The project moves towards the goal. The reason why it is not possible to go directly towards the goal is because the goal is after some time...*

This method of working in a developing cycle secures us from making big changes in the system architecture without also using some resources optimizing it with regards to user operability. In these processes the most important focus is on the hiker and his needs as a user of our system.

## Sherpa – a start

Sherpa is a substantial betterment of today's status. It provides for a centralized database and presentation. It will be possible to change the information registered and authorized databases, providing for a faster information turnaround. By using one system for information saving and modules for information presentation, information access will be eased. The investment is less, and more people will be able to do this work within an organization. This will lift a burden off the smaller organizations as they will not be subject to random whizkids.

By centralizing the information in one database this will also ease the printout of information in different formats. Publishing old-style hiking publications will also be easier.

Providing for Sherpa is only a start, but it is a sound start with regards to the current development in our society. Mobile accessibility, contextual information and service integration are keywords in this future. Building systems like Sherpa will make it possible to maintain free, neutral (with regards to commercial actors) geographical information.

## Sherpa - how

Sherpa should entertain several goals. Amongst others:

### **Simple and non-resource demanding internet alternative:**

The project should provide a free alternative for associations wanting to provide information on areas and cabins via the internet.

### **Information household for beginners:**

Another goal is to help the local associations learn a minimum of structural thinking about the information and ways to keep the information up to date.

### **Common code – common problems and solutions:**

Establishing a common code for all local associations and the national association will ease the goal of a similar layout and keep the information available for all. Problems with code are corrected in one place. Updates provide for positive results for all, but the work is done in one place.

### **Central database gives a consistent information structure:**

This allows for a central portal for a connection of local associations through a national association, although local associations are not needed in this structure. In case of a structure involving local associations this project level information can be presented on the national level. The users are also able to access information with area focus and not local association focus.

## Technical solution (concepts)

It seems natural that all data within one country is placed on one server. This will make it easier to build up externalized units to get information from several countries. Having one central server does not limit the system as long as this is a fast server. The system may as well be built to support one particular local association, or several associations with one common top domain.

**Webmodules:** We picture two webmodules. One for a local association, and one for the national association. (or other level displacements for other uses of the system).

- The membership module (codemed) is based on the webpages of Trondhjems Turistforening in Norway, and should have similar attributes.
- The national associations module (codeland) should be made to support several levels of information depth. The info depth is decided by the organization, and it should be possible to customize this.

**Report generator:** In addition to the webmodules there should be a third module for making reports.

This could be done by using OpenSource PDF-file generators or Microsoft Access for making lists and brochures. This tool would be very suitable for the production of local information material.

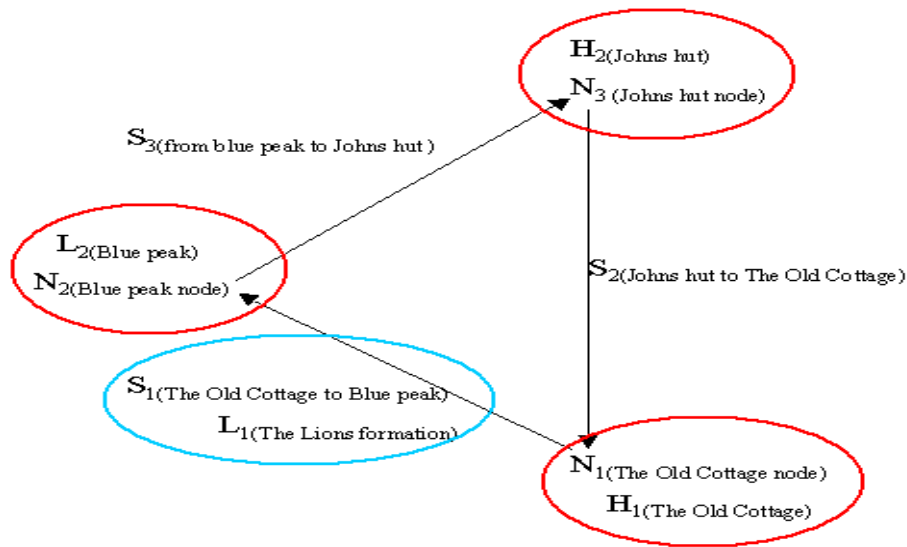
**Database:** The database will be the primary source for information on the internet. This information may be changed/added/deleted via the afore mentioned webmodules. In Trondhjems Turistforening this is done in such a manner that users with little or no technical skills should be able to update and add information.

**Figure 2:** *Edition of cabin information in the current Sherpa system in use by Trondhjems Turistforening.*

The database should be built in such a manner that it may serve organizations of different organizational depth, structure and the professional status. Smaller associations should have basic information, bigger organizations should have info on complex matters, office opening times, arrangements etc...

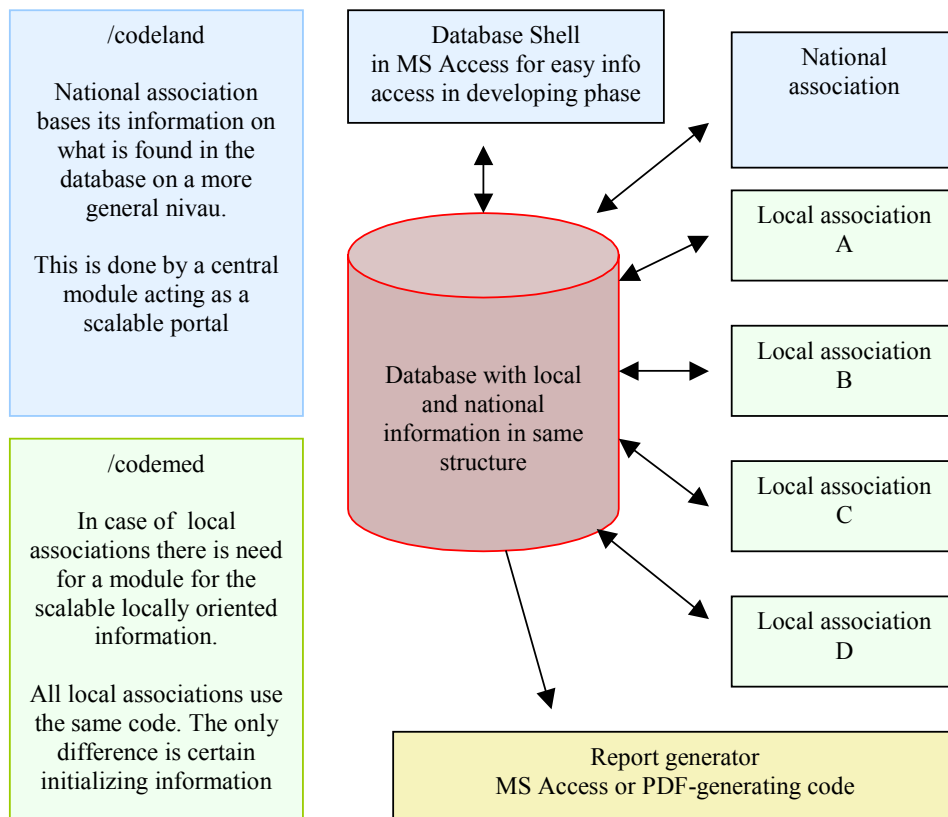
Information flow between the different levels of the organization(s) should also be supported such as local articles (news, arrangements) on a national level (codeland), and vice versa.

The core information in the system is based on nodes and segments with accompanying information.



**Figur 4:** *Scetch of the primary information structure in the database. The system supports complex structures for moving around in the geography. Path (Segment), places (Look\_here) and Nodes. Special entity cabin may be one or more on one node.*

This is an illustration of the database and the modules:



**Figur 3:** *Shows how all modules have a connection to the database.*

## Code technicalities

So far we have not defined hardware and software solutions. This is because the concept is not tied to a specific solution. The very idea of this project is to support other people with information needed to travel within a social context to attain experiences in a known physical environment.

Non-governmental organizations are based on the idea of solving common problems for the benefit of the society or man in general. Using proprietary solutions therefore are less interesting. OpenSource solutions like Apache Web Server, PHP and MySQL are more appropriate than proprietary ones.

However this project is based on a project started in MS-SQL and Active Server Pages. This work has provided us with experience and generated running code. It is therefore in the coming phase of the project ASP will be used. This is also based on available technology, and the project very much needs a testserver with both ASP, MSSQL, MySQL and PHP-installed to provide for a developing environment allowing for a gradual transition to a OpenSource environment.

## Practicalities and resources

As an OpenSource project the philosophy is that some of the users are paying by the contribution of their own work. By licencing the code under GNU GPL the contributors will be well aware of the limits of any commercial adoption of the code.

In Norway "dugnad" is a term coining the activity of providing free work. Young hikers should also use their skills to further develop hiking possibilities. Programming skills may, in this respect, prove as usefull as carpenting skills.

If needed, expertise should be hired where special expertise or need of speedy progress demands this. But free programming services from devoted users should be the main focus. The project manager is situated in Trondheim, Norway. This provides for easy access to competent students from the technical educational services in at NTNU (<http://www.ntnu.no>)

The most critical part of the resource is the database. This services and the related equipment puts high demands on stability. In DNT this database will supply several thousands of requests per hour. DNT's use of the system is in more than one ways testing of the more general applicabilities of the Sherpa System. Based on DNT's current investments in the project the Sherpa team should try to supply DNT with free equipment and services.

To solve the problem we may see three strategies:

- Use of current server
- One or more sponsors pays for server/software, and also helps with place for server and the upkeeping

The server should be measured by the use in DNT. The Sherpa team should seek to trim code and

solutions to optimize the resource input-result gain.

DNT's current sponsorships involve partners from the commercial parts of the society. Today these are a bank, a chocolate fabrique and a garment producer. Perhaps this project may give an opening for a sponsorship from the computer industry? This is of course something that DNT should think about, but it is not the Sherpa team's job to decide what DNT should and should not do. Sherpa seeks to support DNT.

## Sherpa and hiking associations

Sherpa will be a substantial resource when finished. Until then the project needs time from devotees to be finished. The local hiking associations in Norway are expected to contribute with both code and advice. Currently DNT has invested some monetary resources in the project.

The development does not bind the local association as the use of this system will be offered by DNT, and not demanded. The associations involved should secure resources for infrastructure, but as the project gains momentum this will be less needed.

The system will make it possible to have banners. The involved associations will have to arrange the money themselves, but as said before, contributions to the Sherpa Project are more than welcomed both by its benefitors and others. If the system is successful a bonus-system for the involved developers should be discussed. Possibility to stay for free on cabins belonging to the benefited organizations is one strategy.

## Sherpa into the future

Sherpa should be continuously developed, first of all as a helping aid for hiking information. The system will be continuously prereleased to make it possible for the users to give a message back to the developing team. Only by exposing running code to the users will this project fulfill its mission.

Aside from being used for hiking information, the system may be freely adopted to other tasks as long as the license (GNU GPL) is not breached. The initiative of this system stems from Trondhjems Turistforening, it is continued as a project under DNT to supply all hiking associations in Norway with a system for hiking information. The organizations acknowledge the fact that their intention is to get more people to have nature experiences. Thus, supporting the development of this system under an OpenSource licence gives them no trouble. This is also one of the premises set by the project initiator, Ragnvald Larsen.

## Summary

As mentioned earlier the goals of Sherpa is as follows:

- To make updated hiking information easily available.
- Simplify the administration of the information.
- Sherpa is free and is in its current state developed for the Norwegian Mountain Hiking Association and its local associations.
- OpenSource secures an open development structure where the actual users may contribute code and find errors.
- GNU GPL clearly defines the rights of the code.

As it is today, the project's size is too big to be built up by a couple of devotees. Therefore a sound combination of devotees and bought expertise are important factors in the progress and further development of the project.

For now the main monetary contributor of this project is DNT. The main devotee is Ragnvald Larsen, the project manager. Larsen uses his experience and knowledge regarding the problems to steer the project. In this phase of the development it is important that the main monetary contributor experience the project as a sound means to reach its goals. The project is however open for more sponsors, and such sponsoring may influence the direction and focus of the project.

Currently the project employs two students and one full time webmaster at DNT.

By involving more neutral workers the project is less bound in its work.

### **Success factors:**

- Positive information about the project within the main contributing organization, DNT
- Open process, for example: this document
- Project tool should be used, and SourceForge has proved to be a very good tool
- Documentation of progress, and content
- Securing continuity (within the OpenSource milieu and DNT)
- Collaboration from local associations in Norway. Pilot projects.
- Frequent updates on the project homepage

- Planned and foreseeable implementation of the planned modules.