MACE Mobile Client for Windows Mobile 1.0

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MACE Mobile Client – Functional Requirements

The MACE Mobile Client will enable the delivery, creation, and metadata enrichment of MACE contents on mobile devices. The MACE content will be delivered to the mobile device on the basis of certain search filters, whereas the created content is enriched with metadata specifying certain values of these filters. Currently, two types of search filters are imagined: a GPS location-based filter and one based on the MACE taxonomy.

The MACE Mobile client will be part of client-server infrastructure using the OUNL's MACE REST Services. This document will list the functional requirements for the MACE mobile client, and serves as a guideline for the implementation of both the Windows Mobile 6.1 as the iPhone client. The development is envisaged to have several phases, starting with the most basic version of the client and gradually adding more features. Three distinct phases are currently planned: mobile content delivery, mobile content creation, and mobile enrichment.

Phase 1: Mobile Content Delivery

There are several existing applications that follow the basic model of location-based content filtering, one of them is AroundMe. The MACE mobile application is based on this example (see figure 1).
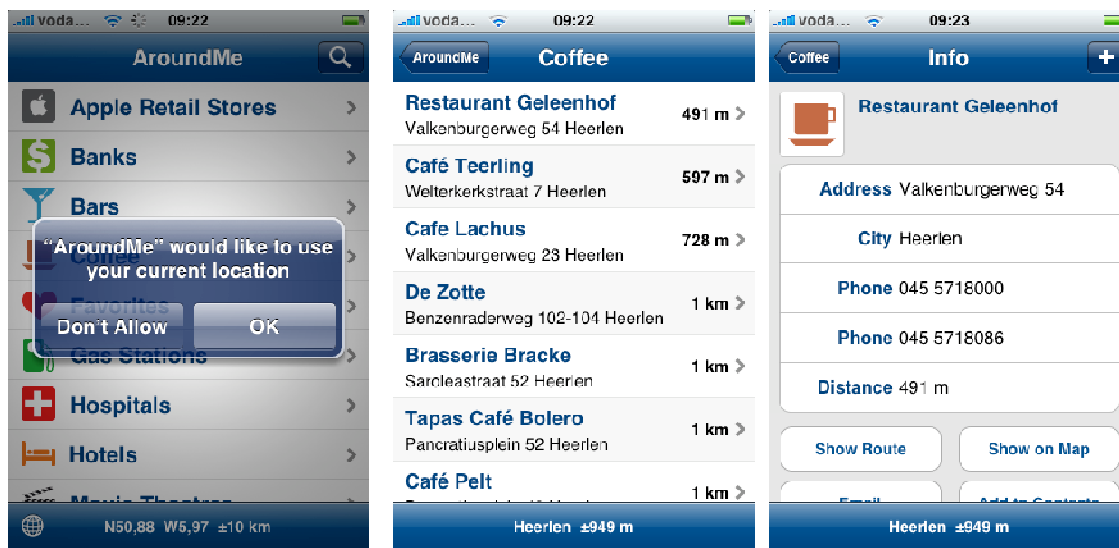

Figure 1 shows the basic principle of Around me, getting location, filtered list of objects, object detail view.

Phase 1 entails the development of a mobile client that accesses the MACE services and provides the user MACE content that is near his/her current location. To access the MACE services the user has to login into the MACE system using his/her username and password. After logging in the mobile client receives a session id that is used to identify the client in subsequent web service calls. Following the log in procedure, the mobile clients GPS location is used to generate a list of contents that are within a specific range from the user. The list consists of the content title and the distance to the real-world object that the content provides some information about. Moreover, the list of contents is filtered by a range indicated by the user. The range will be specified in meters and defines a circle around the user within which all of the content found will be displayed to the user. After retrieving the contents relevant to his/her current location the user can view the content in more detail by selecting the

corresponding title in the list of contents. The client then opens a web browser with the web page that contains the content chosen.

An additional feature: the client shows the user a route from his/her current location to the object of interest. This route is then given using Google Maps.

More specifically, six different use cases can be identified for this phase:

Use Case	Use Case Description
MU1-1	Login to MACE web services using username and password. If username and password are valid the mobile client receives a session token, that is used in subsequent web service calls.
MU1-2	Retrieving the user's GPS location
MU1-3	Retrieving the list of content titles, distances and website URLs from the web services; the client sends a request with GPS location and the range, and gets back a list with content titles, URLs, and distances
MU1-4	Displaying the list of content titles and distances in the mobile application
MU1-5	Opening a web browser with the URL corresponding to the chosen title in the list of content
MU1-6	Setting the range filter for the search range in a configuration panel
MU1-7	Additional: planning a route from the user's current location to the object of interest and displaying the route in a Google Map

Phase 2: Mobile Content Creation

Phase 2 takes the client developed in phase 1 as a basis and adds the creation of photographs with GPS location data attached. After creation the user should be able to choose whether the created content should be uploaded. When the content is uploaded, also GPS location metadata should be stored alongside the content.

Identified use cases for this phase:

Use Case	Use Case Description
MU2-1	Creating picture content
MU2-2	Uploading content
MU2-3	Storing GPS location metadata for the content

Phase 3: Mobile Enrichment

Phase 3 should make it possible to enrich the list of content retrieved in phase 1 and the created photographs of phase 2 with tags that are either chosen by the user or tags that are provided in the MACE Taxonomy. The photographs are either created by the user himself or by other users. Pictures are tagged by selecting the area on the photograph the tag applies to and subsequently adding the tag information and possibly a related comment. Furthermore, when displaying photographs created by other users their tags should also be shown. When selecting a tag on the photograph the tag name and its associated comment is displayed, and a new comment can be added by the user. Summarising the enrichment of the MACE content entails meta-tagging and commenting (annotation).

For this phase the following use cases can be identified:

| Use Case	Use Case Description
MU3-1	Showing a picture with its associated tags.
MU3-2	Tag a picture with self-chosen tags.
MU3-3	Viewing a tag and its comments by selecting the tag shown on the photographs.
MU3-4	Annotate a chosen tag with a text comment
MU3-5	Additional: Meta-tag the chosen content with values of the MACE Taxonomy (can be used a suggestions in a drop-down box).

Overview: Use Case Diagram
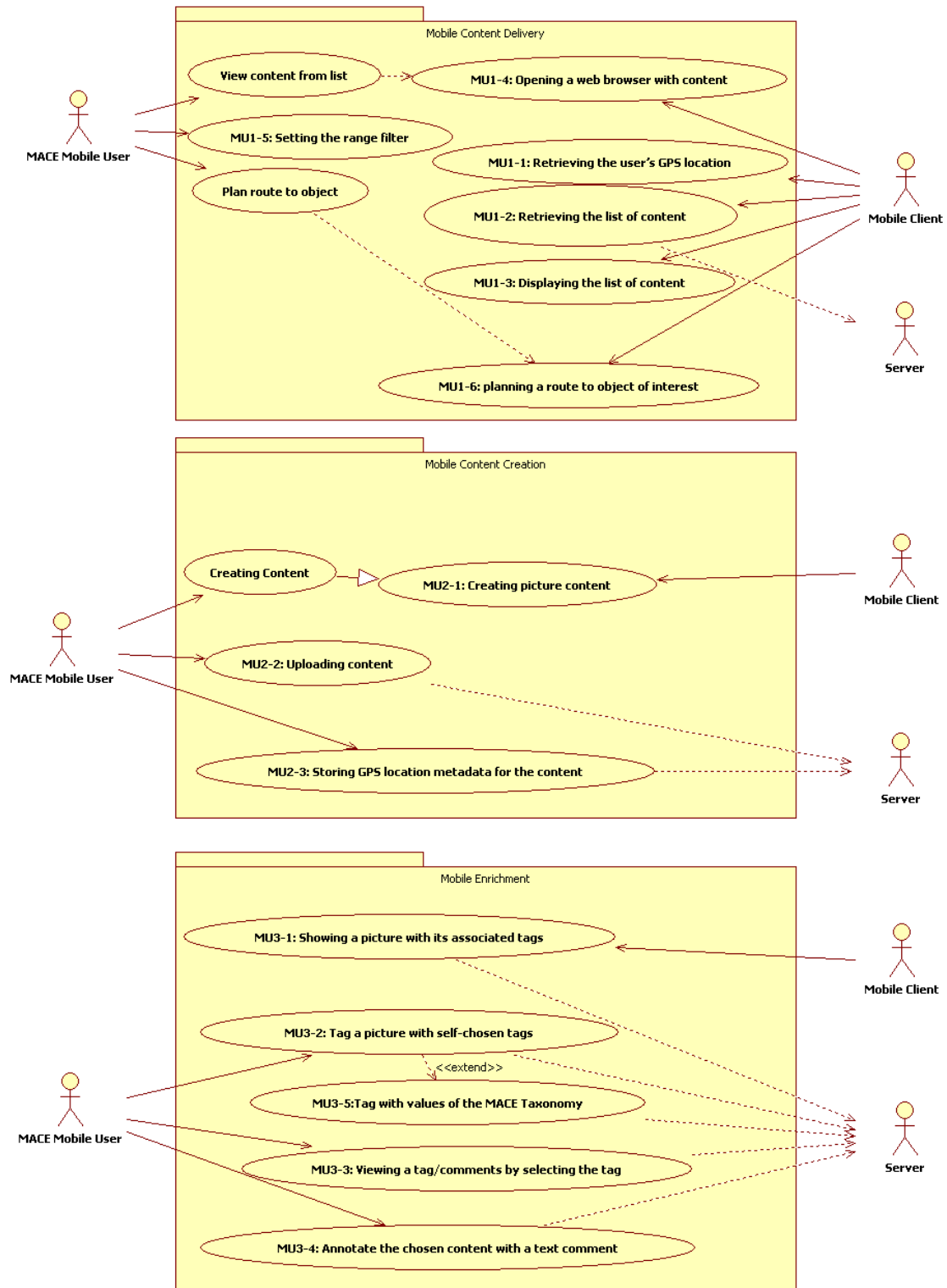
Figuur 1 Use Case Diagram listing the use cases for each phase.