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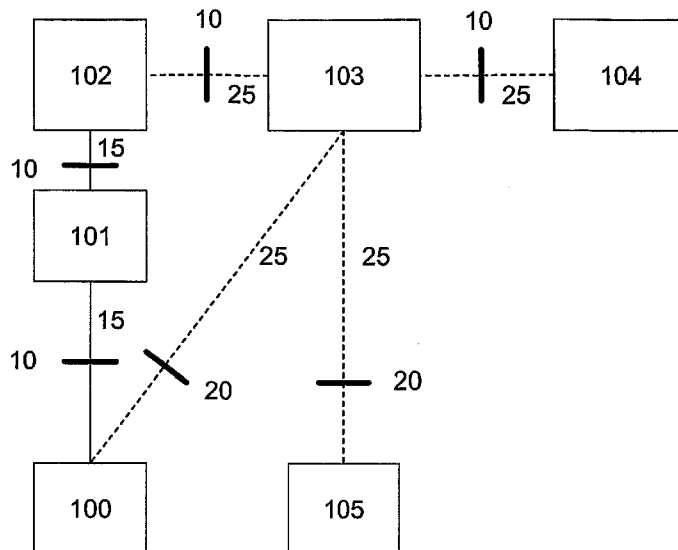
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*[Continued on next page]*

(54) **Title:** METHOD AND ARRANGEMENT FOR AUTOMATIC PROVISIONING, LICENSING AND CONFIGURATION OF CLIENT SOFTWARE

(57) **Abstract:** The present invention enables secure and automatic configuration of a user-specific service, such as a service built around the a mobile terminal (100) with a client software such as Mobile IP, to work specifically with a corresponding back-end infrastructure (101, 102) by means of a provisioning server (103). The overall design objective is ease-of-use. The secondary design objective is to minimize the required adaptions on the client leaving as much control as possible to the server side. The service is designed to work with any client-platform. The overall assumption is that the client is by default bound to the user spesific service at software installation. There is a configurable number of days free-of-charge trial period for this service after initial activation. After the trial period expires, the user is directed to a payment service (104) where he/she is given the option to continue the service by accepting a fee, paid by credit card or by other means. By paying the user also acquire a full software license. Equipped with a full software license the user may use the client together with any user specific ervice provider. The system is managed using a standard web interface available to a management PC (105). Note that the service concept can be considered in a generalized context. The client can receive licenses from one entity and service from another entity. For an overview of the system, see the attached Figure 1.

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# Method and arrangement for automatic provisioning, licensing and configuration of client software

## Introduction

The present invention (see figure 1 for an overview) enables a user-spesific service, such as a service built around a mobile terminal (100) with a client software (such as Mobile IP), to work specifically with a corresponding back-end infrastructure (101, 102) by means of a provisioning server (103). The overall design objective is ease-of-use. The secondary design objective is to minimize the required adaptions on the client leaving as much control as possible to the server side. The service is designed to work with any client operating system platform.

The overall assumption is that the client is by default bound to the user spesific service at software installation. There is a configurable number of days free-of-charge trial period for this service after initial activation. After the trial period expires, the user is directed to a payment service (104) where he/she is given the option to continue the service by accepting a fee, paid by credit card or by other means. By paying the user also acquire a full software license. Equipped with a full software license the user may use the client together with any user specific ervice provider.

The system is managed using a standard web interface available to a management PC (105).

Note that the service concept can be considered in a generalized context. The client can receive licenses from one entity and service provisioning from another entity.

**License policy**

The design of the user-specific service depends on the licensing policy for the service. The policy of choice is based on the following three fundamentals:

1.  A client software license is always associated with a service subscription. In the trial period there is a 1:1 correspondence, ie. the client can only be used with the User-specific service. If the subscription is carried forward by payment, and a full software license is granted, there is a 1:n correspondence. Ie. the client can be used with any service provider. However, the client is still linked to the user-specific service concerning license management. If the user re-installs the client software, on the same device or a different device, the locally stored license information will default to an unknown license. The user must in this case re-activate once with the user-specific service to unlock the client to restore the original configuration and regain his full license rights.

2.  A service subscription, and hence a software license, is registered with a unique device but may be moved between devices. The user may use the license from only one device at a time, however. The user-specific configuration system will automatically detect a license transfer and then change the registered device association accordingly. The software installation on the original device will still work according to the full license rights, however. Hence, the one-at-a-time restriction must be embedded as a legal provision in the license text.

3.  A service subscription, and hence a software license, can be activated for trial only once from a given device. The user may re-activate from the same device under the same account name in order to restore lost service configuration data. Any attempts to repeatedly sign up from the same device under a different account name will be blocked by the user-specific service system. Detection of abuse can be done on the server side by monitoring the number of license moves, which can then be subsequently blocked by the server.

**System Overview**

Using Mobile IP as the user-specific service example, called SmartRoaming for the remainder of the document, the system consists of five different components:

100     Mobile IP Client
101     Mobile IP Home Agent
102     AAA server (e.g. RADIUS based)
103     Provisioning server
104     Credit card payment server (hosted by payment provider)

Figure 1 describes the logics of the component interaction. The client interacts with the mobile IP agent according to the usual IETF standards over the standard interfaces marked with 10 in the figure. The key to system operation is how the client communicates with the provisioning server over the proprietary interfaces 20 described in the present disclosure. Note that the communication paths marked with 15 corresponds to service traffic flow, and paths marked with 25 corresponds to service control flow.

Communication between the client and the provisioning server is implemented as a proprietary interface over http(s). The native web-browser in the client terminal (100) is used to request, display and download information. All logic is implemented on the server side (103). Every transaction starts with the client sending a request to the server. The server determines the current status for the client and generates a series of re-directs corresponding to the different steps in each transaction that is scheduled for the client. Some transactions will trigger a http(s) download as the final step. The content is marked (using the Content-Type header) as a specific MIME application type (application/xxxx). The client software will register itself at installation to handle such content e.g. by means of a browser plugin to avoid the file download dialog for the configuration information, normally provided by the browser.

The interaction between the client (100) and the provisioning server (103) depends on one or more of the following key conditions:

1       The client (100) initiates a request to the server (103) in situations such as i)
        If the client does not have a valid configuration, (ii) If the user selects "My
        Account" from the client user interface, or (iii) whenever the client

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