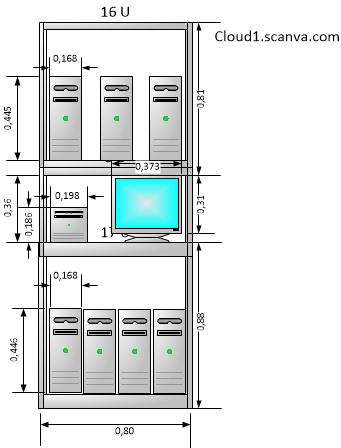
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| DOPS – Daily OPerationS |
| Service Corporations common platform |
|  |
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| **11-04-2013** |

The project has been developed according to the system development model (POSSUM), described in the book:

ISBN 8770342431 “System development and change – An Introduction to retrospective and prospective analysis”

The prototype is developed using various languages and is running as a service on its own physical HPC (high performance cluster)

The prototype and all documentation belongs to SCANVA ApS

SYSTEMSPECIFICATION

DAILY OPERATIONS SYSTEM

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# Preface

## 1.1 System Concepts

The tool provides an easy way for anyone to organize and simplify the management of any activity in any organization. It provides a transparent and flexible system in which individuals can collaborate in a free and flexible, but yet accountable manner. It enables a more organic and loosely defined Organization which adapts to the needs.

## 1.2 Core Entities

* Profile
* Organization
* Task
* Resource
* Customer

## 1.3 Activity flows

### 1.3.1 The life time of a Customer request

1. A potential customer calls the Organization’s main phone number.
2. The Call is automatically routed to Employee Lisa since the 'Switchboard' Role is allocated to her Member Profile.
3. Lisa which receives the call creates a new Customer instance in the system and describes in short the customer request in a Task and delegates the task to the appropriate person in the Organization.
4. The Organization Member which is now responsible of the new Customer Task reads the description and responds to the Customer by Customer page, phone or email with either more detailed questions or an answer.
5. Depending on the Customer response, the Task is now Closed or updated with more details. The Task is then either delegated further, or Approved as a pending Service Task that the Organization have agreed to for fill for the Customer.
6. The Customer will now receive an Order Confirmation via email or mail which states the main details of the agreement.
7. The Task will progress according to the initial planning, towards the state ‘Closed’
8. Depending on the size of the Task, Impacts of changes in the planning, execution or compensation details are communicated to the Customer, and Approved or Rejected by this when needed.

### 1.3.2 The purchase of a new Resource

1. A Member of an Organization purchase a new cordless screwdriver on behalf of the Organization.
2. The Member creates a new Resource instance in the system, describes in short the function and capabilities, and categorise the Resource as a Tool.
3. The Member now labels the Resource with a sticker displaying a unique ID and register it by scanning the Resource label using a system terminal with a build-in camera. In addition a picture of the tool is taken and added to its description.
4. A final confirmation is now done by the Member and the Resource is now visible and available as a Resource within the Organization.
5. The Member has been set as responsible for the Resource, but now transfers the responsibility by placing the new tool inside a toolbox which represents another Resource in the system. Loading the tool into the toolbox is done by selecting ‘Load Resource’, scanning the incoming Resource and the receiving Resource and the transfer is completed. If the responsible Member of the receiving Resource is different from the loaded resource, a confirmation of the transfer is needed.
6. The Member responsible of the Resource e.g. ‘Toolbox#17’ is now also indirectly responsible for the new cordless screwdriver and all other Resources within it.
7. The ‘Toolbox#17’ is now loaded/linked/allocated into the Resource ‘ServiceVan#3’, making the toolbox with its tools a part of the vans equipment.
8. So again the final responsible Member can always be identified.

# Entity/Relation diagram (view of system foundation)



# Data structure diagrams

The following data structure diagrams will only have the most needed attributes shown. Without those attributes then the whole Entity / Relation will fall apart.

Extra attributes will be described elsewhere

## 3.1 Resource



## 3.2 Profile



## 3.3 Resource element



## 3.4 Task

TASK

**PK**

**taskID**

FK

1

taskTypeID

**FK**

**2**

**profileID**

FK

4

customerID

**FK**

**3**

**resourceID**

taskTimestamp

nestedTaskID

previousTaskID

TASKTYPE

**PK**

**taskTypeID**

taskTypeName

taskInfo

PROFILE

**PK**

**profileID**

profileName

protocolTypeID

sizeofProfileData

profile

\_

chunk

\_

id

RESOURCE

**PK**

**resourceID**

profileID

resourceName

**resourceTypeID**

resourceTimestamp

protocolTypeID

sizeofResourceData

amountOfElements

nestedResourceID

previousResourceID

resource

\_

chunk

\_

id

CUSTOMER

**PK**

**customerID**

customerName

customerTimestamp

protocolTypeID

sizeofCustomerData

**customer**

**\_**

**chunk**

**\_**

**id**

## 3.5 Event



## 3.6 Customer



## 3.7 Organization



## 3.8 Qualification



## 3.9 Markers



# Description of entities

## 4.1 Profile

When a visitor of SCANVA.COM wishes to start using the DOPS tool the visitor first needs to create a Profile. The Profile now becomes the virtual entity that uniquely identifies all interaction done by the specific user.

### Attributes

* Username
* Password
* Visibility
* Basic contact details
* Extended contact details
* FOTO
* Description
* Memberships
* Calendar
* Event Log

## 4.2 Organization

The Organization is the main context of all activity. Any user (Profile) is able to create an Organization, and is default set as its Owner. The Owner invites existing Profiles or people by SMS or email to become Members. The Owner now delegates the default system Role ‘Administrator’ or continues on his/her own to define and allocate the Roles needed by the Organization to function. A set of predefined Roles can be used (e.g. the ‘VVS’, or ‘Carpenter’ template), in order to map the appropriate actions to the right people.

### Attributes

* Name
* Description
* Owner
* Basic contact details
* Extended contact details
* FOTO or logo
* Roles (Action/Access mapping)
* Members
* Visibility
* Tasks
* Event Log

## 4.3 Task

A Task represents any level of work that needs to be done by an organization. A Task can be sub divided into more Task’s if needed and their by create a hierarchy of actions that needs to be accomplished by the organization in order to get the job done. A Task can be delegated to any Member of an Organization.

### Attributes

* Title
* Description
* Owner/Parent (if sub-Task)
* Responsible
* Deadline
* Dependencies / Requirements
  + Bookings (Resource’s / Role’s/ Member’s)
  + Tasks
* Priority
* Status (Approval, Progress etc., Review, etc.)
* Event log
* Compensation Details (if Top-level Task)

## 4.4 Resource

Any non-human resource like tools, vehicles, and materials are handled as Resources. In order for any Organization to complete the work defined by its Tasks, dependencies exists on e.g. the right tools to be available.

### Attributes

* Name
* Owner
* Specification Details
* Skill Requirements
* FOTO
* Description
* GUID
* Resource Category
* Maintenance & Service info
* Calendar
* Status (responsible, location, Active Task, current booking, etc.)
* Event Log

## 4.5 Customer

Organizations are able to create Customers. All high level tasks are owned by a Customer.

### Attributes

* Name
* Organization Membership
* Basic contact details
* Extended contact details
* FOTO
* Description
* Memberships
* Tasks
* Event Log

# Dataflow diagrams (daily operations system)

## 5.1 Context (overall perspective)



## 5.2 Level 0 (aggregate data streams)



## 5.3 Level 1 (breakdown in processes)



### [1.1] Employee request handling



#### [1.1.1] Create Customer



#### [1.1.2] Edit Customer



#### [1.1.3] Delete Customer



#### [1.1.4] Create Task



#### [1.1.5] Assign Task



#### [1.1.6] Create Profile



#### [1.1.7] Create Resource



### [1.2] Owner request handling



#### [1.2.1] Handle Registration



#### [1.2.2] Handle Resource Requests



#### [1.2.3] Handle Task Requests



##### [1.2.3.2] Handle Task state change



#### [1.2.4] Handle Event Info Request

