

**REAL SOLUTIONS FOR REAL PROBLEMS**

**SubConTrax 1.0 System Specification**

**Data Model**

# Preface

SubconTrack is a service aimed to assist freelancers and businesses that employ subcontractors, in managing their operations. The service is implemented using cloud-computing technology in order to gain all of its known benefits.

Following are few of the services main features:

**Mobile Device Integration** – the service will be accessed from all main mobile devices

**Social** – each user will be able to interact with other members of the service. One simple example will be a an emergency locksmith service that will use his desktop computer to submit a service call to one of his freelance technicians

**CRM** – the service will have features allowing it’s members to manage the business activity, such as sales processes, account management proposal tracking etc.

**Analytics** – using on the information captured the service will provide reporting, dashboards and alerts to assist the users to better manage their business, make the right decisions and take the right action in the appropriate time

**API** – provide an API to allow an easy integration with other systems

This document provides detailed requirements specification and is intended to be reviewed by system architects and software engineers.

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# 

# Data Model

## Organizations

The Organizations table holds the records of the basic entities in the system, under which users operate. Organizations are essentially the paying customers of the system, but the same table is also used to identify business entities that are not paying SubConTrax customers but other entities the paying Organizations interact with.

### Organization Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | Auto-generated. Record primary key, which also serves as the Organization identifier. |
| Name | String | Yes | The business entity name |
| Telephone Number | String | Yes | Phone number |
| Website | URL | No | The Organization’s website |
| Company | String | No | Company |
| Address1 | String | Yes | Address 1 |
| Address2 | String | No | Address 2 |
| City | String | Yes | City – taken from a valid list of City’s |
| State | String | Yes | State |
| Zip code | Number | Yes | Zip code – taken from a valid list of zip codes |
| Country | String | Yes | Country – taken from a valid list of Countries |
| Cell Phone | Number | No | Cell Phone |
| Work Phone | Number | No | Work Phone |
| Email | String | Yes | Email |
| SubconTrax Organization | Boolean | Yes | Indicating if this is an active Organization of the SubconTrack service. FALSE will indicate that this is an entity that was created manually and added to the My Providers or My Subcontractors lists by one of the service Organizations |
| Status | INT | Yes | For the complete Organization status list and lifecycle please go to [put link].  Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Organization Statuses” |

### Organizations: Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |
| --- | --- |
| Field Name | Value |
| ID | 1 |
| Organization Name | MiYa Solutions |
| Address |  |
| Phone | +1-201-986-6492 |
| Website | http://www.MiyaSolutions.com |
| Company | MiYa Solutions |
| Address1 | 23 Franklin St |
| Address2 |  |
| City | Tenafly |
| State | NJ |
| Zip code | 07626 |
| Country | USA |
| Cell Phone |  |
| Email | info@miyasolutions.com |
| SubconTrax Organization | False |
| Status | Owner |

### Organizations: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

|  |  |  |
| --- | --- | --- |
| Table Name:Field Name | Relationship Type (This object perspective) | Description |
| Codes:Status | 1 to 1 | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Organization Statuses”  For the complete Organization status list and lifecycle please go to [put link]. |

#### Referenced By other objects

|  |  |  |
| --- | --- | --- |
| Table Name | Relationship Type (This object perspective) | Description |
| Customers:Owner | One to many | The list of customers that belong to this Organization |
| Customers:Organization\_ID | One to one | Customers of the SubconTrax service are essentially active Organizations and so will reference the corresponding Organization id |
| Users | One to many | The list of users that are part of the Organizations organization |
| Customer Events | One to many | The registry of the events associated with this Organization and its customers |
| Customer\_Account  \_Registry | One to many | The customer account registry holds the customer billing records that are associated with this Organization and it’s customers. Note that there are two relationships – one for the |
| Customer\_Contracts | One to many | The customer contract table holds the set of agreements between this Organization and its customers |
| Organization Contacts | One to many | Each Organization contact is referencing the contact it is associated with |
| Material Lookup:  Owner | One to many | Each Organization can setup a list of predefined materials that will later be used when creating the BOM of a Ticket |
| Material Lookup:  Supplier | 1 to 1 | The supplier of a material is a Organization with a Supplier role associated |
| Organization\_Roles | One to many | A Organization in the system can act as both a Provider and Subcontractor for example. The list of applicable roles is defined in the Roles table |
| Subcontracting\_Contracts:  Provider | One to many | The subcontracting contracts table holds the set of agreements between this Organization and its providers |
| Subcontracting\_Contracts:  Subcontractor | One to many | The subcontracting contracts table holds the set of agreements between this Organization subcontractors |
| Subcontractor\_Events:  Subcontractor | One to many | The registry of the events associated with this Organization and its Subcontractors |
| Subcontractor\_Events:  Provider | One to many | The registry of the events associated with this Organization and its Providers |
| Subcontractor\_Account  \_Registry:Memeber\_ID | One to many | The subcontractor account registry holds the billing records that are associated with this Organization and it’s providers or subcontractors |
| Subcontractor\_Account  \_Registry:Counterparty | One to many | A reference to the Organization that serves as the counterparty of the billing transaction |
| Organization\_Contacts | One to many | The list of associated contacts for this business entity – Active Organizations have at least one |
|  |  |  |

## Org\_Contacts

This table holds the contacts that are associated with Organizations to allow having more than one contact per Organization

### Org\_Contacts: Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | Auto-generated. Record primary key, which also serves as the Organization identifier. |
| Owner | INT | Yes | The owner (creator) of this contact record |
| Organization | INT | Yes | The Organization that is associated with this contact |
| Title | String | No | Dropdown: Mr. Mrs. Ms. Mss. |
| First Name | String | Yes |  |
| Last Name | String | Yes |  |
| Company | String | No | Company |
| Address1 | String | No | Address 1 |
| Address2 | String | No | Address 2 |
| City | String | No | City |
| State | String | No | State |
| Zip code | Number | No | Zip code |
| Country | String | No | Country |
| Phone | String | No |  |
| Cell Phone | Number | No | Cell Phone |
| Work Phone | Number | No | Work Phone |
| Email | String | No | Email |

### Org\_Contacts: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
| Organization:Organization | Many to 1 | Each Organization contact is referencing the contact it is associated with |
| Organization:Owner | Many to 1 | The Organization that created this record and is entitled to view it or share it with others |

#### Referenced By other objects

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
|  |  |  |
|  |  |  |

## Roles

### Roles: Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| Role Name | String | Yes | The unique name for the role |
| Role ID | Number | Yes | Unique id for the role in this role type (manually generated) |
| Description | String | Yes | Few lines to describe the role |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

#### Organization Roles

|  |  |  |
| --- | --- | --- |
| Role ID | Role Name | Description |
| 1 | System Owner | Only one Organization record denoting the SubconTrax system owner will have this role |
| 2 | Provider | A Organization that has this role associated can act as a provider in a subcontracting contract |
| 3 | Subcontractor | A Organization that has this role associated can act as a subcontractor in a subcontracting contract |
| 4 | Supplier | An entity that sells materials necessary to provide the service |

#### User Roles

|  |  |  |  |
| --- | --- | --- | --- |
| Role ID | Role Name | Role Type | Description |
| 1001 | System Admin | 2 | A SubConTrax system administrator – has all permissions |
| 1002 | Org Admin | 2 | An administrator user for a specific organization |
| 1003 | Employee | 2 | An employee user of a specific organization |
| 1004 | Dispatcher | 2 | A user that dispatches and transfers tickets |

### Roles: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
|  |  |  |

#### Referenced By other objects

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
| Organization\_Roles:Role\_ID | One to many | Organizations roles holds the list of roles a Organization has and has to identify the role linked to a memeber |

## Org\_Roles

A linking table that associates one or many (at least one) with an organization

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| Org\_ID | INT | Yes | A reference to the organization associated with the role identified by the Role\_ID |
| Role ID | INT | Yes | A reference to the role associated with the organization identified by Org\_ID |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |
| --- | --- |
| Org\_ID | Role\_ID |
| 1 | 1 |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Table Name:Field Name | Relationship Type (This object perspective) | Description |
| Roles:Role\_ID | Many to one | The role associated with this organization |
| Organizations:Org\_ID | Many to one | The organization id that is associated with this role |

#### Referenced By other objects

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |

## Users

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | Auto-generated. Record primary key |
| User Name | String | Yes | A unique user name used to login to SubContrax |
| Org\_ID | INT | Yes | A reference to the organization this user belongs to |
| Title | String | Yes | For the complete available statuses go to [put link].  Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “User Titles” |
| First Name | String | Yes | The user’s first name |
| Last Name | String | Yes | The user’s last name |
| Email | String | Yes | The user’s email address |
| Phone | INT | Yes | Phone number |
| Company | String | No |  |
| Address1 | String | No | The user’s mailing address |
| Address2 | String | No |  |
| City | String | No | Taken from a valid list of City’s |
| State | String | No | Taken from a valid list of States |
| Zip Code | INT | No | Taken from a valid list of zip codes |
| Country | String | No | Taken from a valid list of countries |
| Cell Phone | INT | No |  |
| Work Phone | INT | No |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Record 1 | Record 2 | Record 3 |
| ID | 0 | 1 | 2 |
| User Name | System | mark | ishay |
| Org\_ID | 1 | 1 | 1 |
| Title | Mr. | Mr. | Mr. |
| First Name | System | Mark | Ishay |
| Last Name | User | Milman | Yaari |
| Email | system@miyasolutions.com | [mark@miyasolutions.com](mailto:mark@miyasolutions.com) | ishay@miyasolutions.com |
| Phone | 19178167096 | 19178167096 | 12018001558 |
| Company |  | MiYa Solutions LLC | MiYa Solutions LLC |
| Address1 |  | 312 12TH ST. | 23 Franklyn St. |
| Address2 |  |  |  |
| City |  | Cresskill | Tenafly |
| State |  | NJ | NJ |
| Zip Code |  | 07626 | 07670 |
| Country |  | USA | USA |
| Cell Phone |  |  |  |
| Work Phone |  |  |  |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Table Name:Field Name | Relationship Type (This object perspective) | Description |
| Organizations:Org\_ID | Many to 1 | The organization this user belongs to |

#### Referenced By other objects

|  |  |  |
| --- | --- | --- |
| Table Name | Relationship Type (This object perspective) | Description |
| Customer\_Events | 1 to many | The customer events created by this user |
| Subcontractor\_Events | 1 to many | The subcontractor events created by this user |
| User\_Roles | 1 to many | The roles assigned to this user |

## User\_Roles

A linking table that associates one or many roles (at least one) with a user

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| Role\_ID | INT | Yes | A reference to the role associated with the user identified by the User\_ID |
| User\_ID | INT | Yes | A reference to the user associated with the organization identified by Role\_ID |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |
| --- | --- |
| User\_ID | Role\_ID |
| 0 | 1001 |
| 1 | 1001 |
| 2 | 1001 |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Table Name:Field Name | Relationship Type (This object perspective) | Description |
| Roles:Role\_ID | Many to one | The role associated with this organization |
| Users:User\_ID | Many to one | The user id that is associated with this role |

#### Referenced By other objects

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |

## Tickets

Ticket is the basic objects that is used to track a business activity

### Tickets: Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| Name | String | Yes | Static value for all records. Name displayed in the system “Subcontractor” |
| Description | String | No | Static value: “A sub-contractor role indicates the Organization will be on the receiving end of a work ticket” |
| Bill of Materials | INT | No | Reference to a BOM that will be taken into the calculation of the ticket revenue split between the providers and subcontractors specified in the Contract List |
| Created By | INT | Yes | System generated – a reference to the user that created this ticket |
| Created On | Timestamp | Yes | System generated – the time stamp of the date and time this record was created |
| Status | INT | Yes | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Ticket Statuses”  For the complete status list and lifecycle please go to [put link]. |
| ID | Number | Yes | System generated – unique identifier of this record |
| Last Modified | Timestamp | Yes | System generated – the date and time this record was modified |
| Modified By | INT | Yes | System generated – the user last modified this record |
| Customer | INT | Yes | Reference to the customer object representing the client being serviced by the subcontractor |
| Cus\_Contract | INT | No | The reference to the customer contract of this ticket |
| Started On | Timestamp | No | Specifying when the work started |
| Completed On | Timestamp | Yes | The date and time the work completed |
| Settlement Date | Date Operator | Yes | System generated: Specifies when the contract should be settled, which is calculated based on the following criteria:  **T+n**: T being the completion date and n is the number of days  **When customer pays**: in case the customer has credit with the provider, the provider will pay off the subcontractor only when the customer will pay. |
| Settlement Status | One of | Yes | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Settlement Statuses”  For the complete status list and lifecycle please go to [put link]. |
| Type | INT | Yes | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Ticket Types”  For the complete status list and lifecycle please go to [put link]. |

### Tickets: Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

**None**

### Tickets: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
| Customers:Customer | 1 to 1 | The customer associated with this Ticket |
| Codes:Type | 1 to 1 | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Ticket Types”  For the complete status list and lifecycle please go to [put link]. |
| Codes:Status | 1 to 1 | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Ticket Statuses”  For the complete status list and lifecycle please go to [put link]. |
| Codes:Settlement Status | 1 to 1 | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Settlement Statuses”  For the complete status list and lifecycle please go to [put link]. |
| Customer\_Contracts:  Cus\_Contract | 1 to 1 | The customer contract that is associated with this Ticket |

#### Referenced By other objects

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
| BOM | 1 to 1 | The BOM associated with this ticket. BOM is used when calculating the ticket revenue distribution |
| Customer\_Events | 1 to many | The list of customer events associated with this ticket |
| Subcontractor\_Events | 1 to many | The list of Subcontractor events associated with this ticket |
| Ticket\_Contracts | 1 to many | An ordered list of the subcontracting contracts associated with this ticket. The contracts and their order will be used to calculate the revenue generated by this ticket across the different providers |
| Customer\_Account\_  Registry | 1 to many | The customer accounting records associated with this ticket |
| Subcontractor\_Account\_  Registry |  | The subcontracting accounting records associated with this ticket |

## Ticket Contracts

The ticket contracts table holds an ordered list of the subcontracting and customer contracts. The reason for holding a table that links to the contract is to preserve the order as it impacts the billing calculation

### Ticket Contracts: Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | System generated unique identifier for this record |
| Type | INT | Yes | Available list of types is kept in the Codes table where Code\_Group\_ID name is “Ticket Types”  For the complete status list and lifecycle please go to [put link]. |
| Contract ID | INT | Yes | A reference to either the customer or subcontracting Contract |
| Order | INT | Yes | The order of this contract in the list |
| Ticket | INT | Yes | The reference to the ticket associated with the contract list |

### Ticket Contracts: Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

**None**

### Ticket Contracts: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
| Tickets:Ticket | Many to one | The ticket associated with contract list |
| Codes:Type | Many to one | Available list of types is kept in the Codes table where Code\_Group\_ID name is “Ticket Types”  For the complete status list and lifecycle please go to [put link]. |
| Customer\_Contracts:  Contract ID | Many to one | The contract ID can reference either Customer contracts or Subcontracting contracts (determined by the Type) |
| Subcontracting\_Contracts:  Contract ID | Many to one | The contract ID can reference either Customer contracts or Subcontracting contracts (determined by the Type) |

#### Referenced By other objects

**None**

## Customer\_Contracts

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | System generated unique identifier for this record |
| Customer\_ID | INT | Yes | A reference to the customer associated with this contract |
| Status | INT | Yes | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Contract Statuses”  For the complete status list and lifecycle please go to [put link]. |
| Name | String | Yes | Descriptive name for this contract |
| Fee\_Schedule | INT | Yes | A reference to the fee schedule associated with this contract |
| Description | Text | No | Text description for this contract |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

None

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Table Name:Field Name | Relationship Type (This object perspective) | Description |
| Customers:Customer\_ID | 1 to 1 |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## Subcontracting Contracts

The Subcontracting contracts table holds the agreements between a provider Organization and subcontracting Organizations

### Subcontracting Contracts: Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | System generated unique identifier for this record |
| Name | String | Yes | A descriptive name for the contract |
| Subcontractor | INT | Yes | The reference to the subcontractor Organization in this contract |
| Provider | INT | Yes | The reference to the provider Organization in this contract |
| Status | INT | Yes | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Contract Statuses”  For the complete status list and lifecycle please go to [put link]. |
| Fee Schedule | INT | Yes | A reference for the fee schedule for this contract |
| Description | String | No | A text description of this contract |

### Subcontracting Contracts: Static Data

None

### Subcontracting Contracts: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
| Organizations:Subcontractor | Many to 1 | The Organization acts as the subcontractor in this agreement |
| Organizations:Provider | Many to 1 | The Organization that acts as a provider in this agreement |
| Fee\_Schedule:Fee\_Schedule | 1 to 1 | A reference to the fee schedule associated with this contract |

#### Referenced By Other Objects

|  |  |  |
| --- | --- | --- |
| Object Name | Relationship Type (This object perspective) | Description |
| Subcontractor\_Account\_Registry | 1 to many | Each record in the account registry has to reference an exiting contract |
| Fee Schedule | 1 to 1 | The feed schedule must reference the contract to which it belongs |
| Ticket\_Contracts | 1 to many | The list of tickets associated with this contract |

## Bill Of Materials (BOM)

­The Bill of Materials is a container of all materials used to perform a job related to a ticket.

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | System generated unique identifier for this record |
| Total Cost | Number | Yes | The total cost of the associated materials. Default is -1 |
| Total Price | Number | Yes | The total price of the associated materials.  Default is -1 |
| Ticket | INT | Yes | The associated ticket |

### Static Data

**None**

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Digram

#### Referencing Other Objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Ticket | 1 to 1 | The ticket associated with this BOM |

#### Referenced By Other Objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Materials | 1 to many | The list of materials that comprise this BOM |

## BOM Materials

This table holds the list of materials and the quantities associated with a specific BOM

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | System generated unique id |
| Material | INT | Yes | A reference to one of the materials in the material lookup table |
| BOM | INT | Yes | The reference to the BOM object that owns this material list |
| Quantity | Number | Yes | The number of units for the referenced material |
| Cost | Number | No | The cost of this material |
| Price | Number | Yes | The price of the material to be included in the overall BOM price |

### Static Data

**None**

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

Note that the referencing field is denoted after the table name, separated by a colon

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| BOM:BOM | Many to 1 | The BOM associated with this material record |
| Materials\_Lookup:Material | 1 to 1 | The Material (holds name, price etc.) |

#### Referenced By other objects

**None**

## Materials Lookup

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | System generated unique identifier for this record |
| Owner | INT | Yes | The Organization that owns this material, and can determine if it will be available to the public |
| Public | Boolean | Yes | Indicates if this Material should be accessible to other Organizations. |
| Name | String | Yes | The material descriptive name |
| Supplier | INT | Yes | The id of a Organizations who has a supplier role denting the supplier of this material |
| Cost | Number | No | The default cost of the material |
| Price | Number | No | The default price of the material |
| UPC | INT | No | Universal product code |

### Static Data

**None**

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Digram

#### Referencing Other Objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Organization:  Owner | Many to 1 | Each Organization can setup a list of predefined materials that will later be used when creating the BOM of a Ticket |
| Organization:  Supplier | 1 to 1 | The supplier of a material is a Organization with a Supplier role associated |

#### Referenced By Other Objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| BOM\_Materials | 1 to many | BOM material list that references this material |

## Customer

The customers associated with the Organizations

### Fields

| Field Name | Type | Mandatory? | Format / Comments |
| --- | --- | --- | --- |
| ID | Number | Yes | System generated. Unique identifier for this Customer record |
| Name | String | Yes | The customer name |
| Address | String | Yes | The address of the customer |
| Telephone | Phone | Yes | The customer’s phone number |
| Created By | Link | Yes | System generated: reference to the user that created this customer record |
| Created On | Timestamp | Yes | System generated: the date and time on which this Customer record was created |
| Owner | INT | Yes | The Organizations this customer belongs to |
| Organization ID | INT | No | Customers of the SubconTrax service are essentially active Organizations and so will reference the corresponding Organization id |
| Company | String | No | Company |
| Address1 | String | Yes | Address 1 |
| Address2 | String | No | Address 2 |
| City | String | Yes | City |
| State | String | Yes | State |
| Zip code | Number | No | Zip code |
| Country | String | Yes | Country |
| Phone | String | Yes |  |
| Cell Phone | Number | No | Cell Phone |
| Work Phone | Number | No | Work Phone |
| Email | String | No | Email |
| Billing Status | INT | Yes | Available list of statuses is kept in the Codes table where Code\_Group\_ID name is “Billing Statuses”  For the complete status list and lifecycle please go to [put link]. |

### Static Data

**None**

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

Note that the referencing field is denoted after the table name, separated by a colon

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Organizations:Owner | Many to 1 | The Organizations this customer belongs to |
| Organizations:Organization ID | 1 to 1 | Customers of the SubconTrax service are essentially active Organizations and so will reference the corresponding Organization id |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Tickets | 1 to Many | The list of tickets associated with this customer |
| Customer\_Contracts | 1 to Many | The contracts between this customer and its owner Organization |
| Customer\_Contacts | 1 to Many | The list of contacts for this customer |
| Customer\_Events | 1 to Many | The audit trail of events related to this customer |

## Customer Contacts

This table holds the contacts that are associated with Organizations to allow having more than one contact per Organization

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | Auto-generated. Record primary key, which also serves as the Organization identifier. |
| Customer | INT | Yes | The customer that is associated with this contact |
| Title | String | No | Dropdown: Mr. Mrs. Ms. Mss. |
| First Name | String | Yes |  |
| Last Name | String | Yes |  |
| Company | String | No | Company |
| Address1 | String | No | Address 1 |
| Address2 | String | No | Address 2 |
| City | String | No | City |
| State | String | No | State |
| Zip code | Number | No | Zip code |
| Country | String | No | Country |
| Phone | String | No |  |
| Cell Phone | Number | No | Cell Phone |
| Work Phone | Number | No | Work Phone |
| Email | String | No | Email |
| Contact Role | String | No | The role of this contact at the customer organization |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Customer:ID | Many to one | The set of contacts associated with a specific customer |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## Event Lookup

The purpose of this table is to hold the different types of events supported by the system

### Fields

| Field Name | Type | Mandatory? | Format / Comments |
| --- | --- | --- | --- |
| ID | INT | Yes | PK |
| Name | String | Yes | The name of the event |
| Method | String | Yes | The function being invoked when this event occurs |
| Description | String | Yes | Several lines of description |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

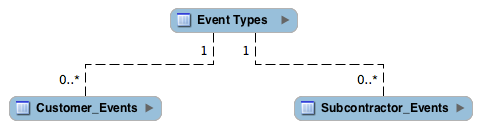
| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

### Event Types: Relationships with other objects

The following diagram and table describe the relationship of this object with other o objects in the data model. It will also provide a description of what additional information to be captured when associating this object with another object.



| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Customer\_Events | 1 to many | A registry of the customer related events that occurred |
| Subcontractor\_Events | 1 to many | A registry of the Subcontracting related events that occurred |

## Customer Events

The customer events table is a registry of all events related to customer activity

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
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|  |  |  |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

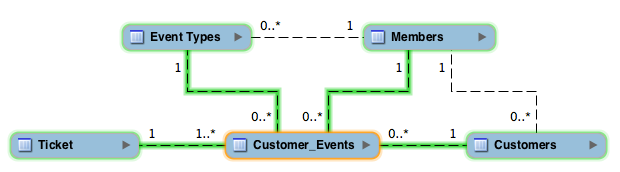
None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

| ID | Field Name | Type | Mandatory? | Format / Comments |
| --- | --- | --- | --- | --- |
|  | ID | INT | Yes | PK |
|  | Name | String | Yes | The name of the event |
|  | Method | String | Yes | The function being invoked when this event occurs |



### Customer Events: Relationships with other objects

The following diagram and table describe the relationship of this object with other o objects in the data model. It will also provide a description of what additional information to be captured when associating this object with another object.

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Ticket | Many to 1 | The ticket that is associated with this event |
| Customers | Many to 1 | The customer associated with this event |
| Organizations | Many to 1 | The Organization that owns this customer and event type |
| Event Types | Many to 1 | Indicating the type of event that was registered |

## Subcontractor Events

The subcontractor events table is a registry of all events related to subcontracting activity

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

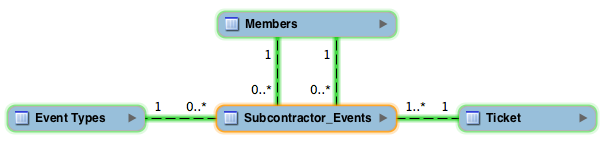
None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

| ID | Field Name | Type | Mandatory? | Format / Comments |
| --- | --- | --- | --- | --- |
|  | ID | INT | Yes | PK |
|  | Name | String | Yes | The name of the event |
|  | Method | String | Yes | The function being invoked when this event occurs |



### Subcontractor Events: Relationships with other objects

The following diagram and table describe the relationship of this object with other o objects in the data model. It will also provide a description of what additional information to be captured when associating this object with another object.

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
| Ticket | Many to 1 | The ticket that is associated with this event |
| Organizations (Provider) | Many to 1 | A reference to the provider associated with this event |
| Organizations (Subcontractor) | Many to 1 | A reference to the subcontractor associated with this event |
| Event Types | Many to 1 | Indicating the type of event that was registered |

## Fee Schedule

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## Fee Calculation Method (FCM)

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Tickets: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

| ID | Field Name | Type | Mandatory? | Format / Comments |
| --- | --- | --- | --- | --- |
| BOM01 | Contract Name | String | Yes | Taken from the associated provider |
| BOM02 | Contract ID | Number | Yes | Unique id for this contract type |
|  |  |  |  |  |

## Customer Account Registry

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Tickets: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## Subcontractor\_Account\_Registry

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Tickets: Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## Code Groups

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
| ID | INT | Yes | Manually generated identifier for the code group |
| Name | String | Yes | Descriptive name for the code group |
| Description | String | Yes | Descriptive text for the purpose of this code group |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
| ID | Name | Description |
| 1 | Organization Status | The list of applicable Organization statuses |
| 2 | Ticket Status | The list of applicable ticket lifecycle statuses |
| 3 | Settlement Statuses | The list of applicable ticket settlement statuses |
| 4 | Ticket Types | The various types of tickets – Work Ticket, Lead etc. |
| 5 | Contract Statuses | The contract lifecycle statuses |
| 6 | Billing Statuses | Customer status indicting if the customer has a balance and whether it is past due |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

## Codes

### Fields

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Type | Mandatory? | Format / Comments |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Static Data

Below you will find the description of specific records that needs to exist in the system. These records need to be available for the users to associate with the related records. Static data records are sort of templates that are available in the system for the user to chose from when creating a record of this object type or need to be referenced from another record created by the user

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Relationships with other objects

The following diagram and tables describe the relationship of this object with other objects in the data model.

Diagram

#### Referencing Other Objects

None

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |

#### Referenced By other objects

| Object Name | Relationship Type (This object perspective) | Description |
| --- | --- | --- |
|  |  |  |
|  |  |  |

# Accounting

The data model supporting the accounting functionality relies on the “Accounting Patterns” article by Martin Fowler.

The data model specified below intends to illustrate the principals and requirements from the billing and accounting module. For the purpose of clarity, following are some highlights:

Event handling

Posting Rules (named Fee Rules in this document)

Account

Transactions – it is required that all transactions resulting by a single event will be registered all at once. To avoid partial entry, in case of a system failure none of the accounting entries should be registered and a roll back to be performed to allow the event to be reprocessed once the system resumes

Reversal Adjustment

# Audit Trail

# Social

# Mobile

# User Permissions

Organization Admin

# Use Cases

## New Subscriber

A person would like to become a subscriber of SubconTrax

### Use Case Diagram

### Web UI

WS.1

WS.2

WS.3

WS.4

### Mobile UI

### Flow Diagram

## User Login

A SubconTrax user logins to the system for any purpose, will be presented with a home page

### Use Case Diagram

### Web UI

WS.5

WS.6

### Mobile UI

### Flow Diagram

## New User

A Organization admin user creates a new user for the Organization it belongs to

### Use Case Diagram

### Web UI

WS.7

WS.8

### Mobile UI

### Flow Diagram

## Edit User

A Organization admin user would like to update a user account like modify permissions, reset password disable a new user for the Organization it belongs to

### Use Case Diagram

### Web UI

WS.7

WS.9

### Mobile UI

### Flow Diagram

## Edit Organization Account

A Organization admin user would like to update general information like Organization phone number, address email etc.

### Use Case Diagram

### Web UI

WS.7

WS.10

### Mobile UI

### Flow Diagram

## Change Billing

A Organization admin would like to replace the existing billing method with a new one to allow the SubconTrax owner to charge for the service

### Use Case Diagram

### Web UI

WS.7

WS.12

### Mobile UI

### Flow Diagram

## New Customer

User adds a customer record

### Use Case Diagram

### Web UI

WS.13

WS.14

### Mobile UI

### Flow Diagram

## Edit Customer Info

A user would like to update the customer information or add contacts

### Use Case Diagram

### Web UI

WS.13

WS.15

### Mobile UI

### Flow Diagram

## Add Customer Contact

A user would like to add a contact

### Use Case Diagram

### Web UI

WS.13

WS.15

WS.16

### Mobile UI

### Flow Diagram

## Edit Customer Contact

The Organization admin would like to update one of the customer’s contacts

### Use Case Diagram

### Web UI

WS.13

WS.15

WS.16

### Mobile UI

### Flow Diagram

## Add Subcontractor

A Organization admin would like to add a new subcontractor

### Use Case Diagram

### Web UI

WS.17

WS.18

WS.19

WS.20

WS.21

### Mobile UI

### Flow Diagram

## Edit Subcontractor

Organization admin would like to edit the general information of a private subcontractor

### Use Case Diagram

### Web UI

WS.17

WS.18

OR

WS.17

WS.19

WS.18

### Mobile UI

### Flow Diagram

## Add Provider

A Organization admin would like to add a provider

### Use Case Diagram

### Web UI

WS.22

WS.23

WS.24

WS.20

WS.21

### Mobile UI

### Flow Diagram

## Edit Provider

Organization admin would like to edit the general information of a private provider

### Use Case Diagram

### Web UI

WS.22

WS.23

Or

WS.22

WS.24

WS.23

### Mobile UI

### Flow Diagram

## Add Provider Contact

The Organization admin user would like to add a contact information in addition to the main contact info available in the Provider general info

### Use Case Diagram

### Web UI

WS.22

WS.24

WS.16

### Mobile UI

### Flow Diagram

## Edit Provider Contact

The Organization admin user would like to update the contact information of one of it’s Provider contacts

### Use Case Diagram

### Web UI

WS.22

WS.24

WS.16

### Mobile UI

### Flow Diagram

## Add Subcontractor Contact

The Organization admin user would like to add a contact information in addition to the main contact info available in the Subcontractor general info

### Use Case Diagram

### Web UI

WS.22

WS.24

WS.16

### Mobile UI

### Flow Diagram

## Edit Subcontractor Contact

The Organization admin user would like to update the contact information of one of it’s Subcontractor contacts

### Use Case Diagram

### Web UI

WS.22

WS.24

WS.16

### Mobile UI

### Flow Diagram

## New Ticket

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Edit Ticket

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Delete Ticket

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Service Ticket Life Cycle

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Lead Ticket Life Cycle

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Transfer Ticket Non Organization

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Transfer Ticket Organization

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## User Receive Ticket

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## User Change Received change Status

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## New Customer Contract

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## New Subcontractor Contact

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Add Material

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Edit Material

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## New User First User Login

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Import Contacts List

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Import Tickets List

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Import Contracts

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Get Balance by User

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Cancel Membership

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

## Monthly Billing event

### Use Case Diagram

### Web UI

### Mobile UI

### Flow Diagram

# State Machines

# GUI Wireframes