ITSIMPLICITY SOLUTIONS

ITS-NetProject™:
FTTH / FTTX network planning & project management software
Contents:

- Introduction FTTH / FTTX network planning
- General information
- Project orientation
- Job orientation
- Material management
- Project management
- Reporting
Extensive system for: Material, Contract and Project management.

• Well-defined structure: three project levels with ‘building blocks’.
• Total process control, including: purchasing, contractors, progress reports.
• Completely customisable and simple to operate.
Introduction
ITS-NetProject is part of the ITS-Software Suite and is made for the complete project- and material management of turn-key telecommunication FTTx / FTTH projects.

It is also used to get a quick estimate of cost and sales prices, material and labour quantities for concepts/drafts and detailed network designs.

ITS-NetProject is the proven product of 30 years of experience in designing, engineering, installing, commissioning and maintaining communication networks.

The software may have added value for anybody who has to deal with network engineering & planning, business case calculations and turn-key projects, large and small, urban and rural, business areas, FTTx networks and massive FTTH projects.
ITS-NetProject: our software for FTTH / FTTx project planning & management.

Turn-key projects
The FTTH / FTTx network planning software was originally made and used internally by: NKF (Nokia / Philips) / Draka (Prysmian Group) and their project offices with local staff for the planning & building of turn-key OSP Telecom projects. Demands: simplified project structure, detailed reporting, clear project management.

History
Since 1983 NKF has been developing pc software for project management. In 1985 NKF started the creation of Toppics: successful project management software, created specially for very large Out Side Plant turn-key projects. The development of NetProject started in 1995 as a replacement for Toppics. Since then, the software has been renewed every year and has been used intensively in several countries in: Africa, Asia, Europe, The Middle-East & The Caribbean for Copper & Optical fibre networks. Since 2012 the software is commercially made available by ITS.
General information
ITS-NetProject is developed as a multi-user system with a central MySQL database. This project planning software offers:

Material management
- Product management (Component & Supplier management)
- Purchasing
- Store management (store content, incoming and outgoing materials, etc.)

Contract management
- Contractor definition
- Contract definition (scope, labour components, prices, etc.)

Project management
- Job / work-order definitions
- Implementation scheduling with Job release & material issue notes
- Progress & as-built reporting, billing & payments
Project orientation
ITS-NetProject is both project- and job (work-order) oriented. Each project is build up in its own project-file, separate from the other projects. There is one MASTER project which is accessible for modification by authorised personnel only. In the MASTER project all relevant data (for instance price-information) is centrally controlled and kept up-to-date. From within each individual project, information can be copied or updated from this MASTER project and any other project.

Creating a new project can be done in several ways:
- Start a new empty project
- Start a new project with all definitions from another project

Within a project you can:
- Define & modify materials & installation units manually
- Copy certain (or all) materials & installation units definitions from other projects
- Update material & installation unit definitions with relevant data & prices
ITS-NetProject uses three levels to define a project:

1. **Area-activity** Job level
2. **Building-block** Plant-unit level
3. **Component** Component level

1. Job level (work-order / activity): plant-unit codes with job-specific quantities

2. Plant-unit level (installation unit): material and/or labour, combination of components

3. Component level: a material or labour element
The Plant Unit System consists out of three basic entities, being:

- **Plant unit**: A Plant unit describes a basic element of the outside plant network from the principal's point of view, and/or the labour required to create this Plant Unit.

- **Component**: A Component is a physical part of one or more Plant Units, or represents physical material for the assembly of a Plant Unit.

- **Plant Unit-Component specification**: A Plant Unit-Component specification defines the amount of a component required in the composition of the Plant Unit.

The Job System consists out of two entities, being:

- **Job**: A Job is an identifiable part of the work in the Project.

- **Job-Plant unit specification**: A Job-Plant Unit specification defines the amount of a Plant Unit required in that Job.

Plant Unit system + Job system = Project definition
Design link
This system is successfully implemented in numerous projects. Plant-units may be regarded as multiple component units, whether they are material components, labour components or a combination of both. The plant-units were introduced to simplify design, project management, purchasing and invoicing procedures.

ITS-NetProject is typically used in combination with our network design tool ITS-NetDesign. With ITS-NetDesign jobs are created automatically, simply by making designs with our FTTH / FTTx drawing objects. To these drawing objects, plant-units and quantities are attached automatically. This drawing information can easily be imported / updated by ITS-NetProject, within seconds all network designs details, quantities and costs can be shown with a variety of standard reports.
The direct link between our network design & project management software

**ITS-NetDesign**
FTTH / FTTX network design

- Design of detailed FTTH-networks
  - AutoCAD® based creation of all required drawings and network related quantities.
  - Unlimited project / network size
  - Totally customisable
  - Produces installer-ready designs
  - Automatic labelling
  - **Automatic job creation**

**ITS-NetProject**
FTTH / FTTX Project Management

- **Reporting**
  - Detailed installation and material quantities and costs per job/activity/area/project.
Example
When drawing in AutoCAD (Map3D) with the ITS-NetDesign toolbar:
• Click in the FTTH / FTTx toolbar “Tubecable 40/10x7 in trench”
• Draw a simple line with a length of 1 meter

In ITS-NetProject the following Bill of Quantities will be produced automatically:

<table>
<thead>
<tr>
<th>DRAWING-OBJECT:</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tubecable 40/10x7 in trench</td>
<td></td>
<td>1m</td>
</tr>
<tr>
<td>1</td>
<td>HDPE-duct 40mm</td>
<td>1m</td>
</tr>
<tr>
<td>2</td>
<td>Guidetube 7/5.5mm</td>
<td>10m</td>
</tr>
<tr>
<td>3</td>
<td>Prefabrication guidetubes in HDPE-duct</td>
<td>1m</td>
</tr>
<tr>
<td>4</td>
<td>Duct identificationmarker</td>
<td>0.5pce</td>
</tr>
<tr>
<td>5</td>
<td>Trenching</td>
<td>1m</td>
</tr>
<tr>
<td>6</td>
<td>Laying tubecable 40mm/10x7mm</td>
<td>1m</td>
</tr>
</tbody>
</table>
In a project-environment, material management is of the utmost importance.

The control over the material locations and material flows has a very high organisational and financial impact on the project.

In ITS-NetProject, therefore the following material management tools are available:
- Product management
- Purchasing
- Store management
Product management
ITS-NetProject: all material and labour components to be implemented in a project can be uniquely defined with article codes, units, supplier information, price information. Quality control documents can be attached per component.

Example
In the main component screen an overview is given of the 89 component definitions in this project X.

A larger FTTH / FTTx project can have 200 – 300 component definitions. (Copper > 900 definitions)
ITS-NetProject is organised in such a way that it can directly be used for project management purposes.

In ITS-NetProject jobs, defined by a scope and a planning, are issued to the contractor for implementation. During the preparation phase the contractor checks the received job on completeness, amounts, etc. and reports deviations to the customer. Any necessary modification to the original job description is done by site instructions.

The sum of the job issue-notes and the site-instructions states the actualised job definition: this is the up-to-date version of what the contractor has to do. In this way the implementation process can flexibly be adapted to the circumstances while keeping completely in control.
**Project management**

A job can be so large or complex that it has to be implemented in parts or sections. For this purpose release notes are issued to inform the contractor when he is allowed to do a certain portion of the job / work. On these release notes the progress is reported, as well as the as-built data.
**Project management**
The following picture displays the main job menu screen. The upper part of the menu displays the different jobs which are to be implemented in this project. In the lower part of the menu the contents and details of the job selected and highlighted in the upper part are displayed.
Project management

By selecting / double clicking a job all detailed information is shown:
• Contract (contractor+prices) selection
• Design status & Logistical status
• Quantity details for designed, extra work & as-built
• Attached documents
• Release notes
• Progress reports & Billing & Payments
• Material & labour details
• And more…..
ITS-NetProject contains a flexible report generator

On all levels (jobs, plant-units, components) or items like contractors or suppliers a specific report can be generated…

There are already more than 80 standard reports, they can be:
Modified, pre-viewed, printed, exported (pdf, Word, Excel, html, data)

The lay-out of all reports can be adapted to the project specific wishes

Some examples:
• “Bill of Materials” (BOM) per job(s)/area/project
• “Bill of Quantities” (BOQ) per job(s)/area/project
• “Bill of Quantities – prices” (BOQ) per job(s)/area/project
Example:

In ITS-NetProject you can choose the type of report and the item(s) for which the report is generated.
Example:

A Bill of Quantities (BOQ) Report in ITS-NetProject:
Example:

A Bill of Materials (BOM) Report in ITS-NetProject:

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Unit</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 37 02 007</td>
<td>TIE-WRAP NYLON 180x4.0MM BLACK</td>
<td>each</td>
<td>3,040.00</td>
</tr>
<tr>
<td>02 37 02 011</td>
<td>FIXATION CLAMP 2x40MM</td>
<td>each</td>
<td>2,615.00</td>
</tr>
<tr>
<td>02 37 02 013</td>
<td>CONNECT PIECE 40MM</td>
<td>each</td>
<td>2,615.00</td>
</tr>
<tr>
<td>02 37 02 014</td>
<td>DOUBLE CONTRA PIECE 40MM</td>
<td>each</td>
<td>2,615.00</td>
</tr>
<tr>
<td>02 37 02 022</td>
<td>HOSE CLAMP 35-50MM</td>
<td>each</td>
<td>2.00</td>
</tr>
<tr>
<td>02 37 30 341</td>
<td>PROTECTIVE DUCT 40MM FLAME RETARDANT</td>
<td>m</td>
<td>3,520.75</td>
</tr>
<tr>
<td>02 37 30 360</td>
<td>MINI TUBE 7/5.5MM RED (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 361</td>
<td>MINI TUBE 7/5.5MM WHITE (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 362</td>
<td>MINI TUBE 7/5.5MM YELLOW (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 363</td>
<td>MINI TUBE 7/5.5MM BLUE (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 364</td>
<td>MINI TUBE 7/5.5MM GREEN (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 365</td>
<td>MINI TUBE 7/5.5MM VIOLET (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 366</td>
<td>MINI TUBE 7/5.5MM BROWN (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 367</td>
<td>MINI TUBE 7/5.5MM BLACK (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 368</td>
<td>MINI TUBE 7/5.5MM ORANGE (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 369</td>
<td>MINI TUBE 7/5.5MM TURQUOISE (CERN)</td>
<td>m</td>
<td>3,500.00</td>
</tr>
<tr>
<td>02 37 30 450</td>
<td>CONNECTOR GUIDE TUBE STRAIGHT 7-9MM</td>
<td>each</td>
<td>100.00</td>
</tr>
<tr>
<td>02 37 30 512</td>
<td>T-CONNECTOR 45/45/90/135MM</td>
<td>each</td>
<td>0.00</td>
</tr>
<tr>
<td>02 37 30 734</td>
<td>COUPLING FLEXIBLE NT6 STRAIGHT</td>
<td>each</td>
<td>8.00</td>
</tr>
<tr>
<td>02 37 30 962</td>
<td>FLEXIBLE TUBE NT2 SPLITABLE BLACK (PACO)</td>
<td>m</td>
<td>14.00</td>
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<tr>
<td>02 37 30 967</td>
<td>FLEXIBLE TUBE EAS FLEX NTB BLACK (CD)</td>
<td>m</td>
<td>10.00</td>
</tr>
<tr>
<td>02 37 30 972</td>
<td>COUPLING DUCT 40MM FLEXFLEX NTB</td>
<td>m</td>
<td>20.00</td>
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<tr>
<td>02 37 30 001</td>
<td>XF6800 CMS-CLASS19&quot; 3V WITH 1U GUIDE CHANNEL</td>
<td>each</td>
<td>4.00</td>
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<tr>
<td>02 37 30 004</td>
<td>XF6710 CMS MODULE PREFAB 12x2EA 5MM</td>
<td>each</td>
<td>24.00</td>
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<tr>
<td>02 37 33 023</td>
<td>XF6810 RACK 19&quot; 1U PREFAB 12x2EA 5MM</td>
<td>each</td>
<td>8.00</td>
</tr>
<tr>
<td>02 37 40 216</td>
<td>PREFAB NT17x7xMM CERN</td>
<td>m</td>
<td>2,000.00</td>
</tr>
<tr>
<td>10002055</td>
<td>OPTICAL FIBRE CABLE 12x2MM 9/125 G 852.08</td>
<td>m</td>
<td>2,000.00</td>
</tr>
<tr>
<td>10002060</td>
<td>OPTICAL FIBRE CABLE 24x2MM 9/125 G 852.08</td>
<td>m</td>
<td>7,000.00</td>
</tr>
</tbody>
</table>