Documentation Pandora ERP system.

4. Calculation, material, work rates and services.

Clusters, clusters_artikelen, calculaties:

```
bisystem=# \d clusters
                        Table "public.clusters"
    Column     |         Type          | Collation | Nullable |        Default
---------------+-----------------------+-----------+----------+-----------------------
 clusterID     | character varying(7)  |           | not null |
 omschrijving  | character varying(45) |           |          |
 prijs         | double precision      |           |          | 0
 eenheid       | character varying(10) |           |          | ''::character varying
 materialen    | double precision      |           |          | 0
 lonen         | double precision      |           |          | 0
 diensten      | double precision      |           |          | 0
 materieel     | double precision      |           |          | 0
 inhuur        | double precision      |           |          | 0
 uren_constr   | double precision      |           |          | 0
 uren_mont     | double precision      |           |          | 0
 uren_retourlas | double precision     |           |          | 0
 uren_bfi      | double precision      |           |          | 0
 uren_voeding  | double precision      |           |          | 0
 uren_bvl      | double precision      |           |          | 0
 uren_spoorleg | double precision      |           |          | 0
 uren_spoorlas | double precision      |           |          | 0
 uren_inhuur   | double precision      |           |          | 0
 uren_telecom  | double precision      |           |          | 0
 sleuvengraver | double precision      |           |          | 0
 persapparaat  | double precision      |           |          | 0
 atlaskraan    | double precision      |           |          | 0
 kraan_groot   | double precision      |           |          | 0
 mainliner     | double precision      |           |          | 0
 hormachine    | double precision      |           |          | 0
 wagon         | double precision      |           |          | 0
 locomotor     | double precision      |           |          | 0
 locomotief    | double precision      |           |          | 0
 montagewagen  | double precision      |           |          | 0
 stormobiel    | double precision      |           |          | 0
 robeltrein    | double precision      |           |          | 0
Indexes:
    "clusters_pkey" PRIMARY KEY, btree ("clusterID")
Referenced by:
    TABLE "cluster_artikelen" CONSTRAINT "clusters_clusterID_fkey" FOREIGN KEY ("clusterID") REFERENCES clusters("clusterID")
```

```
bisystem=#  \d cluster_artikelen
                     Table "public.cluster_artikelen"
    Column     |         Type          | Collation | Nullable |        Default
---------------+-----------------------+-----------+----------+-----------------------
 cluster_artID | integer               |           | not null | 0
 artikelID     | integer               |           |          |
 hoeveelheid   | double precision      |           |          | 0
 clusterID     | character varying(7)  |           |          | ''::character varying
Indexes:
    "cluster_artikelen_pkey" PRIMARY KEY, btree ("cluster_artID")
Foreign-key constraints:
    "artikelen_artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
    "clusters_clusterID_fkey" FOREIGN KEY ("clusterID") REFERENCES clusters("clusterID")
```

```
bisystem=# \d calculaties
                        Table "public.calculaties"
     Column      |         Type          | Collation | Nullable |        Default
-----------------+-----------------------+-----------+----------+-----------------------
 calcID          | integer               |           | not null | 0
 clusterID       | character varying(7)  |           |          | ''::character varying
 calculatie      | integer               |           |          | 0
 omschrijving    | character varying(50) |           |          | ''::character varying
 hoeveelheid     | double precision      |           |          | 0
 eenheid         | character varying(10) |           |          | ''::character varying
 prijs           | double precision      |           |          | 0
 koppelnummer    | integer               |           |          | 0
 materialen      | double precision      |           |          | 0
 lonen           | double precision      |           |          | 0
 diensten        | double precision      |           |          | 0
 materieel       | double precision      |           |          | 0
 inhuur          | double precision      |           |          | 0
 uren_constr     | double precision      |           |          | 0
 uren_mont       | double precision      |           |          | 0
 uren_retourlas  | double precision      |           |          | 0
 uren_bfi        | double precision      |           |          | 0
 uren_voeding    | double precision      |           |          | 0
 uren_bvl        | double precision      |           |          | 0
 uren_spoorleg   | double precision      |           |          | 0
 uren_spoorlas   | double precision      |           |          | 0
 uren_inhuur     | double precision      |           |          | 0
 huisvesting     | double precision      |           |          | 0
 overig          | double precision      |           |          | 0
 reisuren        | double precision      |           |          | 0
 uren_telecom    | double precision      |           |          | 0
 werkomschrijving | character varying(45) |           |          | ''::character varying
 sleuvengraver   | double precision      |           |          | 0
 persapparaat    | double precision      |           |          | 0
 atlaskraan      | double precision      |           |          | 0
 kraan_groot     | double precision      |           |          | 0
 mainliner       | double precision      |           |          | 0
 hormachine      | double precision      |           |          | 0
 wagon           | double precision      |           |          | 0
 locomotor       | double precision      |           |          | 0
 locomotief      | double precision      |           |          | 0
 montagewagen    | double precision      |           |          | 0
 stormobiel      | double precision      |           |          | 0
 robeltrein      | double precision      |           |          | 0
 verwerkt        | integer               |           |          | 0
 calculatiedatum | character varying(10) |           |          | ''::character varying
Indexes:
    "calcID_pkey" PRIMARY KEY, btree ("calcID")
```

Above screenshots of the tables clusters cluster_artikelen and calculaties with its connections.

The base of the clustercalculation is the cluster.
The background of the clustercalculation is:
Fast calculation by products or working hours and services compiled by established collections.
The Icluster is a cluster that is made in the internal workplace and serves delivering to external works, via the warehouse item article number.
The external cluster is order-related creation.
We wil explain the external cluster for the procedure of the internal cluster is likewise.
The cluster nummering structure has been established in the program.
Creating of a cluster starts with creating a clusternumber by choosing a subdiscipline by the menuitem ‘Nieuwe clusters aanmaken’
With the submenuitem Clustergegevens invoeren the data of the cluster is entered.
These items are: description (omschrijving), entity (eenheid), the various man-hours per work unit, hiring (inhuur), equipment and services hours (materieel en diensten uren) and so on.
With the printlist of hiring, equipment and services the internal orders for purchasing are made.
A storage factor for overhead is applied to these hourly rates using the table params.
According to the menu item Invoeren artikelregels per cluster, the materials to be used are introduced for the cluster in question.
If all clusters are defined in this way, the basis for the cluster calculation is complete.
With this, the various clusters and their numbers are stored on the basis of the specifications in the system with the menu Calculatie maken / wijzigen.

Of course, changing is only possible if the calculation has not been forwarded to work number.
After this the calculation is made with the menu Calculatie / Artikellijst / Diensten + Materiëel Bestellijst berekenen / opvragen / printen.

Also with this submenu the calculation and the article list are requested or printed.
If the order for the work has been obtained, the link with the work number is made with the menu Link Calculatie koppelen → produktie
Then the calculation is linked the reservations of the article list are added on reserveringsaldo (reservation balance) in table artikelen and in reserveringsaldo (reservation balance) in table materiaallijsten.
The calculated values and hours are added in the table werken as budgeted amounts and hours budgeted in their respective disciplines.
Also totals are calculated and added in table werken.
With the fields verwerkt and koppelnummer in table calculations and calculatienummer in table werken is the status of the linking stored, to prevent changing calculaties and prevent linking when already linked.
After this, changing the calculation is no longer possible.