



Infor EAM Contract Management

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About this brief

This brief provides conceptual information for the contract management functionality in Infor EAM. This brief is intended to supplement the documentation on this feature. It is not comprehensive and may not include all the details about this functionality.

Related documents

See these documents on the Infor Support Portal for more detailed instructions:

- *Infor EAM System Administrator Guide*
- *Infor EAM User Guide*

Additional documentation is available on the portal. To access documentation, select **Search < Browse Documentation**. If we update this document after the product release, we will post the new version on the portal. We recommend that you check this portal periodically for updated documentation.

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Overview

Contract Management functionality supports service providers in invoicing their services to their customers. Infor EAM has supported these customers through the Asset Management Services and Fleet Billing capabilities for years, but none of these functions included all the cost types incurred by service providers that are currently tracked in Infor EAM. Contract Management replaces both these functions and now includes all the cost types that Infor EAM collects, and offers the ability to charge for usage, such as a monthly lease or a rent.

Customers

Customers were separately defined for Asset Management Services and for the Fleet billing. With the introduction of the new Contract Management functionality, customers can now be defined in one place. On the **Suppliers** screen, a new flag was introduced where a supplier can also be made a customer at the same time. On the new **Customer** screen customers can also be defined separately, but please make sure that if the customer shares the same code with the supplier to define the combination on the **Supplier** screen first.

Types of contracts

Currently two types of contracts are identified.

- **Customer Contracts** are intended for long-term contracts where invoices are generated throughout the contract period on a regular basis. Think of the lease or rental of equipment for the next two years or a maintenance contract for equipment for the next year.
- **Reservations** are intended for short-term rental of equipment where the equipment is issued out to the customer for a period of time. Upon return of the equipment the customer will be invoiced for the usage period, miles or kilometers or any other unit of measure selected and possibly for other one-time charges.

Customer Contract

A Customer Contract has the following important attributes:

1 Contract Code

System generated but can also be entered by the user.

2 Start Date

The date the contract becomes active.

3 End Date

The date it becomes inactive.

4 Customer

Customers are defined in the Customer function.

5 Contract Template

Unlike the Asset Management Services changing a template during the active period of a contract does not impact invoicing. The template is merely used to define the contract. The template is actually copied to the contract and from thereon any changes must be applied to the contract itself. The Contract Template is an optional field.

6 Invoicing Currency

The currency in which the Customer Invoices will be created. It is fully supported to collect costs in USD and invoice the customer in Euros.

7 Revision

Contracts can be changed while they are active, but only by creating a new revision of the active contract. Similar to other revision process in Infor EAM the old contract remains active until the new revision is approved. At that time, the old revision will be superseded.

8 Invoice generation data

a Frequency of invoicing, for example weekly, monthly, quarterly, or yearly.

b Next invoice date

This date must be defined during contract setup. After that, it is automatically updated by the Invoice Generation Process based on the frequency of invoicing.

c Default status of the generated Customer Invoice can be Approved or Unfinished. The latter if you prefer to check manually the invoices before they go out.

d Offset

The number of days the Invoice Generation Process will wait with the invoice generation

after the Next Invoice date. This field controls how many days are available to complete the data entry of cost transactions that must be billed in the invoicing period.

e Use Fixed Exchange rate

If your services are tracked in a different currency than the currency the Customer Invoice will be generated in, the system will convert the currencies during the Invoice Generation Process. Here you can opt to use the same exchange rate for the duration of the contract.

f Sync Fixed Exchange rate

When entering exchange rates, the system will ensure that for the same currency conversion when necessary in the contract the same exchange rate is used.

g Closed WO Only

Switch that determines whether to include open work orders in the Invoice Generation Process or only completed work orders.

9 Rounding Details

a Only relevant for charges that are based on Hourly usage or Daily usage.

b Rounding Hours

If the system determines the actual hours by subtracting an end date and time from a start date and time, there is no guarantee for a nicely rounded number. The option here is to round up or down to whole hours, half hours, or quarter hours, or not to round at all.

c Rounding Days

The same is applicable on daily level as well. The vehicle was issued on Wednesday at 2 pm and returned Thursday at 3:11 pm. The option here is to round up or down to whole days or indeed not to round at all.

d Hourly Invoicing Start Time

Rather than start the hourly counter at 12 midnight, it is possible to start at 7 am for example. This impacts Hourly usage only.

e Hourly Invoicing End Time

Rather than end the hourly counter at 12 midnight, it is possible to end at 6 pm for example. This impacts Hourly usage only.

10 Status

System Codes entity CCST.

11 Buttons

a Copy Contract

Create a new contract using an existing one as a template

b Create New Revision

Create a new revision for this contract from the revision selected

c Reset Contract Charge Definitions

System will refresh the Charge Definition records on header level based on the selected Contract Template. It will also delete Contract Item specific Charge Definition, but only if the Contract Item does not reference a Contract Template itself.

Customer Contract – Contract Items

A Customer Contract must have at least one Contract Item. A Contract Item is a work order, a project, or equipment which is part of the contract and for which the customer will be invoiced. You can associate as many Contract Items to a contract as needed.

Contract Items have the following important attributes:

1 Equipment or Project / Budget or Work Order

You must select exactly one of these. Select freely among organizations if the Customer Contract is associated to a common organization. If the Customer Contract organization is specific, the selection is limited to this organization.

2 Note: Work order cost collected on the children of the selected equipment are also included, as displayed on the **Costs** tab on the **Equipment** screen.

3 Customer

The default here is that this will be the same as the selected customer on the contract header. However, it is possible to change the customer here. The new customer must always be a child of the customer on the contract header. This way the system supports a contract with the parent company while actually supplying the services to a subsidiary of the parent company. Note that the customer hierarchy can be defined on the **Customer** screen. There is no limit as to how often or how many different subsidiaries are used on Contract Items of the same Customer Contract.

4 Invoicing Organization

This field determines the organization that will collect the cost information that forms the basis for the Customer Invoice. If the Customer Contract is associated to a common organization, you can pick any organization here as long as it is consistent with the selected Contract Item. This way the system can support contracts where you deliver services from a US organization to a subsidiary in the US tracked in USD and from a Canadian organization to a subsidiary in Canada tracked in CAD and then invoice the parent company in Amsterdam in Euros. The Invoicing Organization must be a specific organization.

5 Contract Template

Not a mandatory field but very useful if the related Contract Item is an exception. For example, the contract has 20 cars associated. All of them are 5 passenger sedans in the same class, but 2 Contract Items are excavators. Using the Contract Template on the contract header you can set the invoicing strategy, called Charge Definition, for all Contract Items. However, since the two excavators are much more expensive than the sedans, you can use the Contract Template on the two excavators to give them their own individual Charge Definition. Again, the reference to the Contract Template will copy the data from the template to the Contract Item on the contract. Any later changes to the template will not influence the contract anymore.

6 Tax Code

Value defaults from the selected customer. Value can be changed to adjust to the location where the services are delivered.

7 Invoicing Description

Optional description that will be listed on the invoice.

8 Use Fixed Exchange rate

Works the same as on the contract header, but here you can overwrite for a specific Contract Item.

9 Start Date / End Date

Equipment may be on the contract for the whole time. In that case, you can leave these blank. But it is also possible to include equipment for less time. Think of equipment needed for a short time only, or damaged equipment that is replaced with another piece.

10 Time based usage

Enter a Usage Quantity and related UOM. You may want to use this when invoicing a rented or leased space. If you have a rate per square foot, you can either multiply the rate with the 100 square foot you are renting out and enter that on the Charge Definition record as the Rate, in which case you leave these fields blank. If you specify the Rate on the Charge Definition record per square foot, you must enter 100 in the Usage Quantity here to get to the proper amount on the invoice.

11 Equipment Sales

When the Contract Item is equipment you can opt to sell the equipment at the end of the lease period for example. When exercise Option is selected and the Exercise Date has passed the Generate Invoices Process will automatically include the sales transactions in the invoicing process.

a Enter the Sales Price.

b Sales Tax if applicable.

c Equipment Status After Sale

The system will update the equipment status automatically as part of the sales process.

d Exercise option

This check box controls whether the option is activated (sale is on) or not. You can select this check box at any time, even after the contract is approved but before the End Date of the contract.

e Exercise Date

The date on which the sales transaction can be invoiced. You can select this date at any time, even after the contract is approved but before the End Date of the contract.

12 Buttons

a Reset All Contract Templates

For all Contract Items reset the Contract Template value to the setting on the equipment record. If the Contract Item is a project or a work order the template will be removed. Update Charge Definitions accordingly.

b Reset Contract Templates

Same but only for the selected Contract Item.

c Reset All Charge Definitions

For all Contract Items reset Charge Definitions back to header level if no Contract Template is referenced, or to the Charge Definitions of the Contract Template attached to the Contract Item.

- d Reset Charge Definitions**
Same but only for the selected Contract Item.
- e Reset All Tax Codes**
For all Contract Items reset the Tax Code to header level. If the Contract Item references a different Customer than on the header, use the Tax Code of this Customer instead.
- f Refresh All Exchange Rates**
For all Contract Items refresh the Exchange Rate
- g Update Energy Preferences**
Save the Energy settings of all commodities and all equipment referenced on the contract.

Customer Contract – Discounts

Discounts can be associated to any Customer Contract. If the contract has no discounts simply leave this screen blank.

Discounts have the following important attributes:

1 Minimum Value

A threshold value at which a certain discount percentage takes effect.

2 Discount %

3 Apply to Each Invoice

If you select this check box the discount will be applied to the Net Amount plus Adjustments for each invoice the system generates. If not selected the discount will apply to the total contract value, which is the sum of the Net Amount plus Adjustments of all invoices created for the contract.

4 Apply to Full Amount

This controls how the discount will be applied. If you select this check box, the discount will be applied to the full amount. If not selected, the discount will only be applied to the difference between the Net Amount plus Adjustments and the Minimum Value.

Note that, as indicated before, there are really two types of discount records you can create, those applicable for individual invoices, and those for the contract. Within each of these selections, you can only pick one strategy. The system will automatically keep your choice synchronized, meaning if you change one record, the others will be updated automatically.

Example discount calculation for an individual invoice with invoice value at \$6,000 and Apply to Full Amount is not selected:

Minimum Value	Discount %	Discount per step	Discount total
2,500	1	$(4,000-2,500) * 1 / 100 = 15$	$0 + 15 = 15$
4,000	10	$(6,000-4,000) * 10 / 100 = 200$	$15 + 200 = 215$
9,000	15	-	

Example discount calculation for an individual invoice with invoice value at \$6,000 and Apply to Full Amount is selected:

Minimum Value	Discount %	Discount per step	Discount total
2,500	1		
4,000	10	$(6,000) * 10 / 100 = 600$	600
9,000	15	-	

Discounts on contract level are determined the same way. The difference is that here you look at all invoices generated for the contract to determine the invoice value, which is then applied to the discount table.

Discounts will be copied from the template to the Customer Contract automatically anytime a Contract Template is saved on the Customer Contract header. Once they are copied these records can be changed on the contract without impacting the Contract Template and vice versa. Creating them from scratch without a template is also possible.

Customer Contract – WO Criteria

WO Criteria can be associated to any Customer Contract. Their purpose is to select which work orders are eligible for invoicing and which ones are not. If you enter no criteria for a contract that automatically implies you include all work orders. Once you add one line only work orders that satisfy that line will be invoiced. The work order attributes that the system looks at are:

- Department
- WO Class
- WO Type

Enter a * for any of these values to tell the system that all values are included. Needless to say that a record with * in all three fields is the same as not entering a record at all.

Note: This functionality was also available in the Asset Management Services, with one difference, WO class was not available and instead that function offered the equipment class. A logical choice considering the fact that Asset Management Services only offered one equipment reference per contract. Using the equipment class children of a certain class could be excluded from invoicing. Since Customer Contracts does not have this constraint it made sense to replace this with the work order class.

The Grouping attribute can be used to aid grouping and identification of invoice lines. The Fleet Billing offered an ability to associate a work order type to either the maintenance or the non-maintenance group. The way it is solved here allows you to use any grouping codes and thus support more than two. Because the grouping function is combined on the **WO Criteria** tab and not on a dedicated tab you need to consider the following:

- The Grouping values can be entered manually
- They only work for work order types
- Values entered for work order type * will not be used
- There is no validation on unique constraints so it is possible that you enter two different Grouping values for the same work order type. In case more than one value is found for the same WO Type the system will select the first if you sort them alphabetically.

Example:

Department	WO Class	WO Type	Grouping
*	CLASS 1	Breakdown	Maintenance Work
*	CLASS 2	Breakdown	Maintenance Work
PAINT	*	*	Other Work
BODYWORK	*	PM	PM Work
*	*	PM2	PM Work

First, determine which work orders will be included

- Any work order with class is “CLASS 1” and WO Type is “Breakdown” will be included.
- Any work order with class is “CLASS 2” and WO Type is “Breakdown” will be included.
- From the “PAINT” department all work orders will be included.
- From the “BODYWORK” department all work orders with WO Type “PM” will be included.
- Any work order with WO Type “PM2” will also be included.

On the invoice lines the following Grouping may now appear, depending on whether work orders were actually found and invoiced for that WO Type:

- “Maintenance Work” for WO Type “Breakdown”.
- “PM Work” from WO Type “PM” or “PM2”.

Note 1: Maintenance Work will be ignored because it is the second value for Breakdown.

Note 2: Other Work will be ignored because it is associated to WO Type *

The WO Criteria only impact two of the six Charge Categories: WO Charges and Sales Transactions. Charge Categories are discussed in detail later in this document.

WO Criteria will be copied from the template to the Customer Contract automatically anytime a Contract Template is saved on the Customer Contract header. Once they are copied, these records can be changed on the contract without impacting the Contract Template and vice versa. Creating them from scratch without a template is also possible.

Customer Contract – Commodities

On the Commodities tab, you can add Commodity codes. These Commodity codes are only energy related commodities and are here to support the invoicing of energy costs to your customer. It is possible to invoice these without commodities attached to the contract, but the use of this tab will simplify data entry requirements.

Energy consumption can be invoiced to your customer based on attributes like Submetered (yes or no) or by using an Invoice Percentage of the utility bill for meter 123. It is obvious that whatever choice you make, the choice is made for each equipment individually. That then means that if you are leasing 20 spaces to a customer on this contract, that you will have to create 20 individual records for electricity, and if you want to invoice water as well, 20 more records for water simply because the mentioned attributes are different for each equipment and commodity. Invoice Percentage for example will almost certainly depend on the size of the space and the water bill and electricity bill will have a different meter, hence 40 charge definition records will be required.

If you have a contract on which these 20 spaces are listed as Contract Items, you add a commodity on this tab, and there is a Charge Definition record for that commodity, the system will automatically create 20 records for that commodity for any of the 20 spaces attached. When creating these Charge Definition records for that commodity, it will also pull in the energy preferences of those 20 spaces for that commodity if these already exist to ease data entry. The process on the **Charge Definition** tab will be discussed in more detail.

Deleting a commodity from the contract does the same thing but now deletes Charge Definition records for that commodity. Again, rather than one by one, this is done automatically for all equipment attached to the contract.

Charge Definitions for energy cannot be associated to Contract Items that are a project or a work order.

Customer Contract – Sales Prices

There are two ways to charge your customers for the work orders that you execute. You can invoice your customer at cost with possible markups, or you can invoice a fixed sales price. The latter will invoice the same price every time you execute the work order, regardless of the actual costs you book against that work order. Sales prices can be defined for the following entities:

- Service Problem Codes
- PM Schedules
- Standard WO
- Tasks
- Parts

Invoicing is done in this sequence as well. What this means is that if a work order is attached to a Service Problem Code for which you charge \$1,000 that is all the invoice will show. The fact that the work order references several tasks with their own sales price and that several parts were issued with their own sales price as well, will be ignored because the system assumes it is all included in

the \$1,000. The system will search for the Sales Price on the Customer Contract first. If not found it will try to find a Sales Price on the entity itself.

Note that it is possible to combine the two ways of invoicing. Activities for a work order that does not reference a Service Problem Code or a PM Schedule or a Standard WO can be invoiced at cost. If Tasks are sold as well then still any work order activity that does not reference a Task can be invoiced at cost.

Sales Prices will be copied from the template to the Customer Contract automatically anytime a Contract Template is saved on the Customer Contract header. Once they are copied, these records can be changed on the contract without impacting the Contract Template and vice versa.

Customer Contract – Causes

Contract Clauses can be defined on any contract if required.

Clauses will be copied from the template to the Customer Contract automatically anytime a Contract Template is saved on the Customer Contract header. Once they are copied, these records can be changed on the contract without impacting the Contract Template and vice versa. Creating them from scratch without a template is also possible.

Customer Contract – Charge Definitions

Charge Definitions determine what you will invoice on the contract and how you will invoice.

Contract Items have the following important attributes:

1 Contract Item

The equipment, project or work order for which this record is applicable.

- a If you reference a specific Contract Item the Charge Definition record is applicable for that Contract Item only.
- b If you leave this field blank, the Charge Definition is applicable for all Contract Items. These are referred to as Charge Definitions on header level. The reason for these records is obvious, if you want to invoice work order costs for all Contract Items on the contract you can achieve that with one record, rather than entering a record for each Contract Item.

2 Invoicing Organization

If a Contract Item is referenced this will be the Invoicing Organization selected on the Contract Item. Otherwise, you can select a value here depending on the organization on the Customer Contract header. Please realize that if you have a mixture of Contract Items that you may need multiple Charge Definitions on header level each representing all different Invoicing Organization used on these Contract Items.

3 Source Code

This field is protected by the system, but gives important details as to the origin of this record. The following values can be found:

a Header Template

Meaning this record was copied from the Contract Template when the template was attached to the contract header.

b Header

This record was manually created by the user or it was originally copied from the Contract Template but then changed by the user.

c Item Template

This record was copied from the Contract Template when the template was attached to the Contract Item.

d Item

This record was manually created by the user or it was originally copied from the Contract Template but then changed by the user.

e Generated Item

This record was created by the system automatically to ease data entry for the user.

4 Invoicing Description

Optional description that will be listed on the invoice.

5 Charge Category

The major cost types recognized by the Customer Contract invoicing process are identified here. The following values exist:

a WO Charges

Invoice work order costs.

b Sales Transactions

Invoice work order related costs, but against a fixed sales price.

c Fuel Charges

Invoice fuel issues from the fuel management system.

d Energy Charges

Invoice energy usage like electricity or gas.

e Usage Charges

Invoice usage per period (such as monthly rent) or per unit of measure (such as miles driven).

f One Time Charges

Invoice one-time costs like contract initiation fees, lawyer fees, etc.

6 Charge Subcategory

The major cost types are all broken down into a lower level called Charge Subcategory. The values that can be selected vary with the selected Charge Category. The following values exist:

a For WO Charges

i) Labor

- ii) Hired Labor
- iii) Services
- iv) Stock Items
- v) Direct Purchase
- vi) Tool costs
- vii) All Cost Types
- viii) **Note:** Invoice differences is currently not supported/handled in the Invoice Generation Process.

- b For Sales Transactions
 - i) Service Problem Codes
 - ii) PM Schedules
 - iii) Standard WO
 - iv) Tasks
 - v) Parts
 - vi) All Sales Entities
- c For Fuel Charges
 - i) **Fuel Code**
This list is determined by the Fuels entered on the **Fuels** screen.
 - ii) All Fuels
- d For Energy Charges
 - i) **Commodity**
This list is determined by the energy Commodities entered on the **Commodity** screen. When you add a Charge Definition on header level for Energy Charges for a specific Commodity and the commodity exists on the **Commodity** tab of the contract, then the system will automatically add this same Charge Definition record to all Contract Items that are equipment and where you have not made an exception for that Contract Item by selecting a specific Contract Template for that item. For each Contract Item it will also pull in the energy preferences for that item and commodity if these already exist to ease data entry.
 - ii) When you add a specific Commodity to a specific Contract Item the system will also pull in the energy preferences for that item and commodity if these already exist to ease data entry.
 - iii) **All Energy Commodities**
When you add a Charge Definition on header level for Energy Charges for the generic group All Energy Commodities, the system will automatically add Charge Definition record to all Contract Items that are equipment and where you have not made an exception for that Contract Item by selecting a specific Contract Template for that item. It will create a record for each commodity code that is selected on the contract (see the **Commodities** tab). For each Contract Item it will also pull in the energy preferences for that item and commodity if these already exist to ease data entry.

When you add the generic group All Energy Commodities to a specific Contract Item the system will do the same but now only for that one Contract Item.

- e For Usage Charges
 - i) Usage Charge by period for which you can create user codes using the System Codes function (entity CCUC).
 - (1) Hourly
 - (2) Daily
 - (3) Weekly
 - (4) Monthly
 - (5) Quarterly
 - (6) Yearly

- **Usage Based**

Usage based on meter readings. When you use this Charge Subcategory you must also provide a unit of measure (UOM) to identify the meter the charge is based on.

When you add a Charge Definition on header level for Usage Based Usage Charges for a specific UOM, the system will automatically add this same Charge Definition record and UOM to all Contract Items that are equipment and where you have not made an exception for that Contract Item by selecting a specific Contract Template for that item. For each Contract Item it will also pull in the Starting Meter Value and the Estimated Daily Usage for that item if these already exist to ease data entry.

When you add a Charge Definition for Usage Based Usage Charges for a specific UOM a to a specific Contract Item the system will also pull in the Starting Meter Value and the Estimated Daily Usage for that item if these already exist to ease data entry.

- Usage Charges (user codes not supported for this generic group).
- For One Time Charges you can create user codes using the System Codes function (entity CCOC).
 - At Contract Start
 - At Contract
 - Fuel Charges
 - All One Time Charges (user codes not supported for this generic group).

7 Charge Level

The system recognizes three levels of invoicing that all serve a purpose and can be used when required. The following values exist:

- a **Transaction Adjustment**

This is the lowest level in the hierarchy and is equivalent to the level on which the transactions are recorded in the database. If for example you want stock items or issues invoiced, you have to use this level in your Charge Definition setup.

- b **Subcategory Adjustment**

On this middle level you can apply charges to a specific group of transactions. For example,

you can add a \$50 administration fee because you issued materials from the warehouse or you can add a 2% tax to all fuel issues.

c Charge Category Adjustment

This is the highest level in the hierarchy and can be used to invoice charges applicable to the Charge Category. For example, you have determined that the minimum charge per Contract Item for all WO Charges combined is \$200 or that the first \$250 of work order cost is included in the rental fee of the space and is therefore free of charge.

8 Invoice

A check box that if unselected will exclude this line from invoicing. Use this if you want to make an exception. For example, all work order charges will be invoiced, except the Tool Costs. You can achieve this by entering a Charge Definition record for the Subcategories Labor, Hired Labor, Services, Stock Items and Direct Purchases (5 records) or you can achieve the same by entering one line for Subcategory All Cost Types and one line for Tool Costs but for this line unselect Invoice. Only two records needed now.

9 Invoice Conditional

This is a check box as well and plays a role only on the two highest levels, Charge Category Adjustment and Subcategory Adjustment. Using the same example of the \$50 administration fee because you issued materials from the warehouse. What should happen in case there were no stock issues? Should the system still invoice the \$50? With Invoice Conditional you can control this behavior:

- a If selected the system will invoice only if the next lower level combined charges are greater than zero.
- b If unselected the system will invoice no matter what.

10 Rate

This is the Invoice Price that will be used, but Rate is not used on all Charge Definition. It is only used for:

a Energy Charges

If entered the system will use this Rate as the utility rate. If left blank the system will use the calculated rate from the utility invoice.

b Usage Charges

None of these charges have a cost transaction in Infor EAM, as is done for stock items for example, the rate must be supplied manually.

c One Time Charges

Same as for the Usage Charges.

11 Adjustments

Every charge transaction can be adjusted up or down. Markups or discounts are both supported. You can simply enter positive or negative numbers. Leaving one blank means the adjustment function is not used and 0 adjustment will be applied. The following fields are available to adjust charges:

a Adjustment % Before

Adjustment of the transaction amount. For example, 10% would add \$25 to a stock issue of 10 bearings at \$25 each. Transaction value now \$275.

b Adjustment Unit Price

Adjustment of the transaction price. For example, \$1 would add \$10 (10 bearings * \$1) to that same issue. Transaction value now \$285.

c Adjustment Transaction

Adjustment of the transaction. For example, \$15 would simply add \$15 to the invoice amount. Transaction value now \$300.

d Adjustment % After

Adjustment of the adjustments so far. For example, -2% would remove \$6 of the total so far (\$300) resulting in an invoice amount for this stock issue of \$294.

e Minimum Quantity

The transaction quantity will be compared with the Minimum Quantity and if the transaction quantity is less, the system will invoice the minimum quantity. Not so relevant for a stock issue (and maybe even undesirable but then you can simply leave this field blank), but you may have a contract where you invoice miles driven and you assume a minimum of 2,000 miles a month, for example to cover certain maintenance costs on that same equipment.

f Minimum Charge

Minimum value of the charge. Say that you issue one O-ring for \$0.25 and that is the all the work order charges you have to invoice, but you want at least \$25.

g Maximum Charge

Maximum value of the charge. For example, you can specify that no invoice line should be created for more than \$500 dollar.

h Free Up To

The first \$100 of work order charges are free.

i Note: You can use these adjustments on any of the three Charge Levels. But it is obvious that certain fields make more sense on certain levels.

The Adjustment Transaction field for example is more valuable on Subcategory and Charge Category Adjustment level. Adding a lump sum amount to each stock issue may not be what you want, and if you do please realize that a higher number in this field will very quickly explode the invoice amount. You can say the same for Minimum Charge, Maximum Charge and Free Up To.

12 Taxable

Check box that indicates the line is taxable or not.

13 Tax Code

Reference to the applicable Tax Code used to calculate the tax amount.

14 Usage Charges related fields:

a UOM

The meter UOM must be entered every time you create a Charge Definition for Usage Based charges.

b Starting Meter Value

The value of the meter at the beginning of the contract. This is the starting value for the first invoice.

c **Estimated Daily Usage**

If estimated usage is charged here you can specify the estimated daily usage. The system applies the following preferences in determining the average daily usage during the Generate Invoices Process:

- i) Take Estimated Daily Usage from Charge Definition record if entered.
- ii) Else take Estimated Daily Usage from the meter of the equipment if entered.
- iii) Else take Average Daily Usage from the meter of the equipment.

15 Usage and Energy Charges related fields

a **Charge Estimated Usage**

The system will invoice actual usage entered in the form of meter readings, but if readings are not up to date, because the last two weeks no readings have been entered, the system will also invoice the estimated usage for those two weeks.

b **Rollover**

Like the rollover minutes of your cell phone plan. Normally if you are charging for 2,000 miles a month and the customer only uses 1800 they lose the 200. With Rollover selected the 200 goes into a buffer that can be used in the next invoicing periods when they go over the 2,000.

c Note that these check boxes also apply to Energy Charges.

16 Energy Charges related fields:

a **Submetered**

Indicates that the space / equipment is submetered and that the system can use actual consumption records as the basis for invoicing.

b **Use Floor Area**

The alternative to Submetered. Now the utility invoice determines the basis for the energy consumption. When you select Use Floor Area the system will try to calculate the Invoicing Percentage based on the floor area of the Contract Item and that of the utility bill source, which is typically the building that the Contract Item resides in.

c **Invoicing Percentage**

Percentage of the utility bill consumption that will be invoiced.

d **Utility Bill Source**

Reference to the equipment that is referenced on the utility bill. Note that the utility bill may determine the consumption, but also the rate, if the rate was not specified specifically on the Charge Definition record.

Note: These energy related fields along with the Invoice indicator and the energy commodity code (Charge Subcategory) are considered the Energy Preferences and can be stored for future use. Which means that after this contract ends and you use the same equipment on a new contract and you charge for electricity again then the values from the previous contract come in as default values on the new contract.

17 WO Charges related fields:

- a Trade and Occupation Type (Type of Hours) can be used to specify charges differently for the labor related Charge Subcategories (Labor, Hired Labor and Services) of the work order, depending on the trade or type of hours booked. If trades and occupation types are defined on Charge Definition records, they are invoiced in the following sequence:
 - i) Trade and Occupation Type both entered
 - ii) Trade is NULL and Occupation Type is entered
 - iii) Trade is entered and Occupation Type is blank
 - iv) Trade is NULL and Occupation Type is NULL

Note: Trade * is just another Trade, it is not considered to represent All Trades and therefore is not handled as an exception.

- b Part Class can be used to specify charges differently for the material related Charge Subcategories (Stock Items, Direct Purchases) of the work order, depending on the part class.

18 Buttons

a **Reset Tax Codes**

System will reset tax Codes based on the selected values for the associated Contract Items.

b **Associate Missing Meters**

For all Contract Items where a Usage Based charge definition references a meter (UOM) that does not exist on the equipment the system will add this meter to the equipment.

c **Update Energy Preferences**

Save the Energy settings of all commodities and all equipment referenced on the contract.

The list on this screen is not as most other screens. To make it obvious what the system will invoice for each Contract Item the list shows a combination of actual records and logical records. The actual and logical records can be easily identified as follows:

Source Code	Contract Item	Record Type
Item Template	Filled in	Actual record you can edit
Item	Filled in	Actual record you can edit
Generated Item	Filled in	Actual record you can edit
Header Template	Empty	Actual record you can edit
Header	Empty	Actual record you can edit
Header Template	Filled in	Logical record you cannot edit
Header	Filled in	Logical record you cannot edit

The reason to display the logical records is to make it easy for you to determine what exactly the system will invoice for each Contract Item. There is no need this way to manually interpret header level records and see if they may, or may not, apply to a Contract Item.

Considerations:

- Charge Definitions are always invoiced per Contract Item. You cannot create a Charge Definition record that is actually applicable for the contract only. This means you have to be careful with the setup of certain items to accomplish the desired invoice result. For example, say you have a contract initiation fee of \$1,000 at contract start, which you defined on header level (Source Code is Header). If you have two Contract Items attached to your contract both these will invoice \$1,000. If this was your plan, then this works. If you meant one-time \$1,000 for all Contract Items on the contract, you should change the \$1,000 in this scenario to \$500. As an alternative consider using the **Adjustments** tab for this charge, because there you can adjust on contract level.
- WO Charges do include any additional costs entered on the **Additional Costs** tab of the work order.
- If the Charge Level is “Subcategory Adjustment” and this Charge Definition record is based on the “generic” Charge Subcategory then Invoice Conditional is automatically implied. This is an obvious choice since otherwise if you had 100 different fuels for example the system would create Detail Invoice Lines for all these fuels based on the “All Fuels” record, even though only two fuels are actually invoiced. This will be regardless of the actual setting selected by the user, in other words, if you unselected Invoice Conditional on a Charge Definition record for WO Charges, All Cost Types on level Subcategory Adjustment then the system will ignore your choice during the Generate Invoices Process and make it Invoice Conditional. If you want to avoid this create a Charge Definition record referencing the specific subcategories instead.
- One Time Charges for projects and for work orders can only be handled via header level Charge Definitions, applicable for all Contract Items, or via an adjustment on the **Adjustments** tab. You cannot add One Time Charges specifically to these two types of Contract Items.

Charge Definitions will be copied from the template to the Customer Contract automatically anytime a Contract Template is saved on the Customer Contract header or on a Contract Item. Once they are copied, these records can be changed on the contract without impacting the Contract Template and vice versa. Creating them from scratch without a template is also possible.

Customer Contract – Adjustments

Adjustments are changes you want to apply to the invoicing outside the setup of the contract Charge definitions. There could be any reason to create adjustments, including a customer disputed an invoice and you have decided to give a \$100 credit, or equipment was returned in such bad shape that it warrants an extra charge of \$150 for unexpected repairs.

You should not confuse Adjustments on this tab with the Adjustment fields that manipulate a transaction value already discussed on the **Charge Definition** screen. The same name was chosen because in the end they all influence what is invoiced and they can add or subtract to that invoice amount. The word adjustment nicely covers that capability.

Adjustments have the following important attributes:

1 Contract Item

Optional field. If entered, the Adjustment will be invoiced as part of the Contract Item costs. If blank, the Adjustment will be treated as an Adjustment on contract header level.

2 Adjustment

Reference to the **Adjustment** screen where you can define Adjustments.

3 Tax Code

If entered the system will calculate the Tax amount.

4 Adjustment Type

You can create your own codes on the **System Codes** screen (entity AJTP). The system will not let you select types that are either Invoice Discount or Contract Discount. These are protected and used by the Generate Invoices Process to handle discounts.

5 Date

The date this Adjustment must be invoiced.

6 Status

Status of the Adjustment (System Codes entity AJST). Only approved adjustments will be selected by the invoicing process. Once invoiced the system will change the status to Invoiced and will add the invoice number on the Adjustment record for future reference.

7 Quantity

Number of times the adjustment should be applied

8 Rate

Price of the adjustment

9 Total Amount = Quantity * Rate, but it is not necessary to enter any values. If Rate is blank the Total Amount is automatically set to 0 (zero). If Quantity is blank the Total Amount is automatically set equal to the entered Rate.

10 Exchange Rate

The system will try and find the exchange rate for you. If the Adjustment date is in the past it will try and find the exchange rate for that day. If it is in the future it will use todays date. If a Contract Item is selected and Use Fixed Exchange Rate is selected for the Contract Item the system will default the exchange rate from the Contract Item.

This field can be left blank if the Adjustment is going to be invoiced in the future and the exchange rate is therefore not known yet. Note that you can also manually clear the value in this situation and wait until the system determines the exchange rate at the time of invoice generation.

For adjustments with a date on or before today you will need to provide the exchange rate, providing the currency in which the adjustment is defined is different than the currency in which the contract will invoice.

Customer Contract Examples

Maintenance Services based on Costs

Work orders are executed and the customer is billed at cost plus a markup of 10% for all costs except for materials, which is at 5% with a minimum of \$2.50 per transaction. Tool usage is not invoiced. An invoice is created once a month and the first \$250 dollars in that period are free. In the invoice period work may not be required, but since you have to be prepared to react quickly when needed, the customer has agreed to pay a fixed monthly contribution of \$250 regardless of the fact any work is done. Finally, there is a fixed \$50 admin fee if parts are used on work orders to cover overhead in the warehouse. This Charge is conditional, meaning no charge is invoiced if no parts were issued.

Define this contract as follows, but take into consideration that other ways may lead to the same result.

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments			
					% Before	Min.	Trans Adj.	Free Up To
WO Charges	All Costs	Transaction	Yes	10				
WO Charges	Stock Items	Transaction	Yes	5	\$2.50			
WO Charges	Direct Purchases	Transaction	Yes	5	\$2.50			
WO Charges	Tool Costs	Transaction	No					
WO Charges	Stock Items	Subcategory	Conditional			\$50		
WO Charges	All Costs	Charge Cat.	Yes				\$250	
Usage Charges	Monthly Costs	Transaction	Yes	\$250				

The following work is executed over the last month:

WO	Type	Act.	Task	Cost Type	Trans. Qty.	Trans. Price	Invoice
10000	None	01	None	Part 1	10	\$0.20	\$2.50
				Part 2	2	\$90	\$189
				Labor	4	\$100	\$440
				Tool Costs	8	\$25	\$0
Total							\$631.50

The Invoice this month will be \$681.50:

Charge Category	Subcategory	Charge Level	Amount
WO Charges	All	Charge Category	\$681.50 - \$250 = \$431.50
Usage Charges	All	Charge Category	\$250
WO Charges	Parts	Charge Subcategory	\$189 + \$2.50 + \$50 (admin fee) = \$241.50
WO Charges	Labor	Charge Subcategory	\$440
Usage Charges	Monthly	Charge Subcategory	\$250

Maintenance Services based on Sales Prices

Work orders are executed and the customer is billed at sales prices. There are no monthly fees, but because this is a returning customer you will sell parts at 5% discount of our list price. Exceptions are made for parts with very low margin, they still get the 5%, but the sales price will be specified on the contract to compensate for the low margin.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments		
					% Before	Min.	Free Up To
Sales Trans.	All Entities	Transaction	Yes				
Sales Trans.	Parts	Transaction	Yes	-5			

Sales Prices:

Entity	Code	List Price	Contract Price
Service problem Code	SPC 1	\$1500	
PM Schedules	PM 1	\$750	
Standard WO	Std. WO 1	\$600	
Task	Task 1	\$150	
Task	Task 2	\$145	
Part	Part 1	\$0.25	\$1
Part	Part 2	\$100	

The following work is executed over the last month:

WO	Type	Act.	Task	Cost Type	Trans. Qty.	Trans. Price	Invoice
10000	SPC 1	01	Task 1	Part 1	10	\$0.20	\$1500
				Part 2	2	\$90	
				Labor	4	\$100	
				Tool Costs	8	\$25	
10001	PM 1	01	Task 1	Part 1	10	\$0.20	\$750
				Part 2	2	\$90	
		02	None	Labor	4	\$100	
				Tool Costs	8	\$25	
10002	Std. WO 1	01	Task 1	Part 1	10	\$0.20	\$600
				Part 2	2	\$90	
		02	None	Labor	4	\$100	
				Tool Costs	8	\$25	
10003	None	01	Task 1	Part 1	10	\$0.20	\$150
				Part 2	2	\$90	
		02	Task 2	Labor	4	\$100	\$145
				Tool Costs	8	\$25	
10004	None	01	Task 1	Part 1	10	\$0.20	\$150

WO	Type	Act.	Task	Cost Type	Trans. Qty.	Trans. Price	Invoice
		02	Task 2	Part 2	2	\$90	\$145
		03	None	Part 1	10	\$0.20	\$9.50
				Part 2	2	\$90	\$190
				Labor	4	\$100	-
				Tool Costs	8	\$25	-
Total							\$3639.50

The Invoice this month will be \$3639.50:

Charge Category	Subcategory	Charge Level	Amount
Sales Transaction	All	Charge Category	\$3639.50
Sales Transaction	Serv. Problem Code	Charge Category	\$1500
Sales Transaction	PM Schedule	Charge Subcategory	\$750
Sales Transaction	Standard WO	Charge Subcategory	\$600
Sales Transaction	Tasks	Charge Subcategory	\$590
Sales Transaction	Parts		\$199.50

Note how the system does not invoice the labor and tool costs of activity 03 of work order 10004, despite the fact you selected All Sales Entities. The explanation; there is no Task selected on that activity. If you want to make sure you never do work for free you can combine Sales Transactions and WO Charges or make sure that no work order is ever created without a service problem code, or PM schedule or standard WO and that no work order activity is ever created without a task reference.

Maintenance Services based on combination of Costs and Sales Prices

Work orders are executed and the customer is billed at sales prices. There are no monthly fees, but because this is a returning customer you will sell parts at 5% discount of our list price. Exceptions are made for parts with very low margin, they still get the 5%, but the sales price will be specified on the contract to compensate for the low margin. Also work orders transactions that have no predefined sales price are still billed at cost plus a markup of 10% for all costs except for tool costs which is at 5% with a minimum of \$2.50 per transaction.

Note that you cannot make an exception for materials now, because materials are either sold or not. For work orders you can do both on the same contract, sell if it references a service problem code, a PM schedule or a standard WO, at cost if it does not. For a work order activity you can do both as well, sell if it references a Task, at cost if it does not reference a Task. A material does not have this distinction.

For this contract an invoice is created once a month and the first \$250 dollars spent on Sales Transactions in that period are free. Because it is not sure that work must be performed, but you have to be prepared to react quickly when needed, the customer has agreed pay a fixed monthly contribution of \$125, regardless of the fact any work is done.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments		
					% Before	Min.	Free Up To
WO Charges	All Costs	Transaction	Yes	10			
WO Charges	Tool Costs	Transaction	Yes	5	\$2.50		
Sales Trans.	All Entities	Transaction	Yes				
Sales Trans.	Parts	Transaction	Yes	-5			
Sales Trans.	All Entities	Charge Cat.	Yes			\$250	
Usage Charges	Monthly Costs	Transaction	Yes	\$125			

Sales Prices:

Entity	Code	List Price	Contract Price
Service problem Code	SPC 1	\$1500	
PM Schedules	PM 1	\$750	
Standard WO	Std. WO 1	\$600	
Task	Task 1	\$150	
Task	Task 2	\$145	
Part	Part 1	\$0.25	\$1
Part	Part 2	\$100	

The following work is executed over the last month:

WO	Type	Act.	Task	Cost Type	Trans. Qty.	Trans. Price	Invoice			
10000	SPC 1	01	Task 1	Part 1	10	\$0.20	\$1500			
				Part 2	2	\$90				
				Labor	4	\$100				
				Tool Costs	8	\$25				
10001	PM 1	01	Task 1	Part 1	10	\$0.20	\$750			
				Part 2	2	\$90				
		02	None	Labor	4	\$100				
				Tool Costs	8	\$25				
10002	Std. WO 1	01	Task 1	Part 1	10	\$0.20	\$600			
				Part 2	2	\$90				
		02	None	Labor	4	\$100				
				Tool Costs	8	\$25				
10003	None	01	Task 1	Part 1	10	\$0.20	\$150			
				Part 2	2	\$90				
		02	Task 2	Labor	4	\$100	\$145			
				Tool Costs	8	\$25				
10004	None	01	Task 1	Part 1	10	\$0.20	\$150			
				Part 2	2	\$90	\$145			
		03	None	Part 1	10	\$0.20	\$9.50			
				Part 2	2	\$90	\$190			
				Labor	4	\$100	\$440			
				Tool Costs	8	\$25	\$210			
				Tool Costs	2	\$1	\$2.50			
Total		Sales				\$3639.50				
Total		WO Charge				\$652.50				

Invoice this month will be \$4167.00:

Charge Category	Subcategory	Charge Level	Amount
Sales Transaction	All	Charge Category	\$3639.50 - \$250 = \$3389.50
WO Charges	All	Charge Category	\$652.50
Usage Charges	All	Charge Category	\$125
Sales Transaction	Serv. Problem Code	Charge Subcategory	\$1500
Sales Transaction	PM Schedule	Charge Subcategory	\$750
Sales Transaction	Standard WO	Charge Subcategory	\$600
Sales Transaction	Tasks	Charge Subcategory	\$590
Sales Transaction	Parts	Charge Subcategory	\$199.50
WO Charges	Labor	Charge Subcategory	\$440
WO Charges	Tool Costs	Charge Subcategory	\$212.50
Usage Charges	Monthly	Charge Subcategory	\$125

Vehicle Lease with Period and Fuel charges

Two vehicles are leased for a fixed price per month of \$350. But you also charge an insurance fee of \$50 per month that you do not want included in the lease fee. There are no charges for miles or any other usage charges, but there is a signup fee of \$500 at contract signing. The customer can fill-up the vehicles at your gas station at 10% above cost with any appropriate fuel. Your promise is to never charge more than \$60 for a full tank. Only if they use your gas station there is a monthly admin fee of \$25, regardless of the gas they use. If they use Euro because of import costs you charge an extra \$2 per gallon and there is no \$60 maximum either.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments		
					% Before	Max.	Price
Usage Charges	Monthly Costs	Transaction	Yes	\$350			
Usage Charges	Insurance Fee	Transaction	Yes	\$50			

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments		
					% Before	Max.	Price
Fuel Charges	All Fuels	Transaction	Yes	10%	60		
Fuel Charges	Euro	Transaction	Yes	10%		\$2	
Fuel Charges	All Fuels	Charge Cat.		Yes, Conditional			\$25*
One Time Charge.	Signup Fee	Transaction	Yes	\$500			

*On this Charge Level adjusting the price (Adjustment Price) is similar to adjusting the transaction (Transaction Adjustment) simply because the invoice quantity will be assumed 1.

They filled up one vehicle three times this month:

Fuel	Trans. Qty.	Trans. Price	Invoice
Premium US	10	\$3.50	\$38.50
Premium US	15	\$3.80	\$60 (was \$62.7, but \$60 is the max)
Euro	5	\$10.00	\$65 (\$50 +10% of \$50 + 5*\$2)

The Invoice this month will be \$1988.50:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$400 (per vehicle)
Fuel Charges	All	Charge Category	\$188.50
One Time Charges	All	Charge Category	\$500 (per vehicle)
Usage Charges	Monthly	Charge Subcategory	\$350 + \$50 (per vehicle)
Fuel Charges	Premium US	Charge Subcategory	\$98.50
Fuel Charges	Euro	Charge Subcategory	\$65
One Time Charges	Beginning of Contract	Charge Subcategory	\$500 (per vehicle)

The Invoice next month (no trips to our gas station) will be \$800.00:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$350 + \$50 = \$400 (per vehicle)
Usage Charges	Monthly Lease	Charge Subcategory	\$350 (per vehicle)
Usage Charges	Monthly Insurance	Charge Subcategory	\$50 (per vehicle)

Vehicle Lease with Period and Usage Based charges

One vehicle is leased for a fixed price per month of \$350. But you also charge an insurance fee of \$50 per month that you do not want included in the lease fee. On top of that there is a charge for miles, but only if you drive more than 1,000 miles per period. Per mile the charge would be \$0.50. There is also the signup fee of \$500 at contract signing.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments		
					% Before	Min.	Free Up To
Usage Charges	Monthly Costs	Transaction	Yes	\$350			
Usage Charges	Insurance Fee	Transaction	Yes	\$50			
Usage Charges	Usage Based - Miles	Transaction	Yes	\$0.50			\$500
One Time Charge	Signup Fee	Transaction	Yes	\$500			

The car went 900 miles the first month. The Invoice for this month will be \$900.00:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$400
One Time Charges	All	Charge Category	\$500
Usage Charges	Monthly	Charge Subcategory	\$350 + \$50 = \$400

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	Usage Based	Charge Subcategory	\$450 - \$500 = \$0
One Time Charges	Beginning of Contract	Charge Subcategory	\$500

The car went 1100 miles the second month. The Invoice for this month will be \$450.00:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$400 + \$50 = \$450
Usage Charges	Monthly	Charge Subcategory	\$350 + \$50 = \$400
Usage Charges	Usage Based	Charge Subcategory	\$550 - \$500 = \$50

Vehicle Lease with Usage Based charges and Minimum Quantity

One vehicle is leased for a minimum price per month of \$1,000. That includes all maintenance costs, insurance, and 2,000 miles per period. Extra miles over 2,000 are invoiced at \$0.50 per mile.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Min. Qty.	UOM Related	
						Charge	Estimated Daily Usage
Usage Charges	Usage Based - Miles	Transaction	Yes	\$0.50	2,000	No	

The car went 1,600 miles the first month. Meter readings were entered for the complete invoicing period. The Invoice for this month will be \$1,000:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$1,000
Usage Charges	Usage Based	Charge Subcategory	\$1,000

The car went 2100 miles the second month. The Invoice for this month will be \$1050.00:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$1050
Usage Charges	Usage Based	Charge Subcategory	\$1050

A six-month run could look like this:

Invoice Period	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Minimum Quantity	2,000	2,000	2,000	2,000	2,000	2,000
Actual Miles	1,600	2,100	2,500	1,950	1,900	2,050
Invoice Quantity	2,000	2,100	2,500	2,000	2,000	2,050
Invoice Price	\$1,000	\$1,050	\$1,250	\$1,000	\$1,000	\$1,025

If you add rollover buffering to this contract:

Invoice Period	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Minimum Quantity	2,000	2,000	2,000	2,000	2,000	2,000
Actual Miles	1,600	2,100	2,500	1,950	1,900	2,050
Invoice Quantity	2,000	2,000	2,200	2,000	2,000	2,000
Invoice Price	\$1,000	\$1,000	\$1,100	\$1,000	\$1,000	\$1,000
Rollover buffer	400	300	0	50	150	100

Vehicle Lease with Usage Based charges and Minimum Quantity and Estimated Usage

One vehicle is leased for a minimum price per month of \$1,000. That includes all maintenance costs, insurance, and 2,000 miles per period. Extra miles over 2,000 are invoiced at \$0.50 per mile. If meter readings are not always available estimates will be calculated and invoiced.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice Rate	Min. Qty.	UOM Related		
					Charge Estimated Usage	Estimated Daily Usage	
Usage Charges	Usage Based - Miles	Transaction	Yes	\$0.50	2,000	Yes	50

The car went 1600 miles the first month. Meter readings were entered 4 days short of the invoicing period end date. The Invoice for this month will be \$1,000.00:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$1,000
Usage Charges	Usage Based	Charge Subcategory	\$1,000
Usage Charges	Usage Based	Charge Subcategory	\$0 (estimated)

The car went 2100 miles the second month. Meter readings were entered 1 day short of the invoicing period end date. The Invoice for this month will be \$1075.00:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$1075
Usage Charges	Usage Based	Charge Subcategory	\$1050
Usage Charges	Usage Based	Charge Subcategory	\$25 (estimated)

A six-month run could look like this:

Invoice Period	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Minimum Quantity	2,000	2,000	2,000	2,000	2,000	2,000
Actual	1,600	2,100	2,500	1,950	1,900	2,050
Missing reading days	4	1	5	1	0	3
Estimate Usage therefore	200	50	250	50	0	150
Invoice Quantity	2,000	2,100	2,500	2,000	2,000	2,050
Estimated Invoice Quantity	0	50	250	0	0	150

Invoice Period	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Invoice Price			\$1,250	\$1,000		
Estimate	\$1,000	\$1,050	\$125		\$1,000	\$1,025
Estimate Credit		\$25	-\$25	-\$125		\$75

If you add rollover buffering to this contract:

Invoice Period	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Minimum Quantity	2,000	2,000	2,000	2,000	2,000	2,000
Actual	1,600	2,100	2,500	1,950	1,900	2,050
Missing reading days	4	1	5	1	0	3
Estimate Usage therefore	200	50	250	50	0	150
Invoice Quantity	2,000	2,000	2,450	2,000	2,000	2,000
Estimated Invoice Quantity	0	0	250	0	0	100
Invoice Price				\$1,000		
Estimate	\$1,000	\$1,000	\$1,225		\$1,000	\$1,000
Estimate Credit			\$125	-\$125		\$50
Rollover buffer	200	50	0	0	100	0

Space Lease with Usage and Energy charges

A space in a building is leased for \$5 per square foot per week. The space is 200 square foot. There are no other charges but for energy. The electricity bill for the building is invoiced based on the floor area, which is 10%. The rate varies and is determined by the electricity bill. Water is also invoiced. The space has its own water meter. Water is charged at \$0.01 a gallon with a minimum of 2,000 gallons.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Min. Qty.	Energy Related Type	Energy Related Invoice %
Usage Charges	Weekly Rent	Transaction	Yes	\$5			
Energy Charges	Electricity	Transaction	Yes			Floor Area	10
Energy Charges	Water	Transaction	Yes	\$0.01	2,000	Submeter	100

Make sure you enter the Usage Quantity (200) and related UOM (square foot) on the **Contract Item** tab for this space. Or alternatively you can convert the \$5 to a \$1,000 per month.

The invoice period is from March 10 to April 9, so there are 31 days in the invoice period. The space used 1900 gallons of water and the building used 20,000 kWh at \$0.10 a kWh. The utility bill only covered the period until April 5.

The Invoice for this month will be \$4,648.57:

Charge Category	Subcategory	Charge Level	Amount
Energy Charges	All	Charge Category	\$220
Usage Charges	All	Charge Category	\$4,428.57
Energy Charges	Water	Charge Subcategory	\$20
Energy Charges	Electricity	Charge Subcategory	\$200 (until April 5)
Usage Charges	Weekly	Charge Subcategory	\$4428.57 = \$5*200*4.428571429 (periods)

The second invoice period is from April 10 to May 9, so there are now 30 days in the invoice period. The space used 2,100 gallons of water and the building used 25000 kWh at \$0.10 a kWh. The utility bill only covered the period until May 5. The Invoice for this month will be \$4,556.71:

Charge Category	Subcategory	Charge Level	Amount
Energy Charges	All	Charge Category	\$271
Usage Charges	All	Charge Category	\$4,285.71

Charge Category	Subcategory	Charge Level	Amount
Energy Charges	Water	Charge Subcategory	\$21
Energy Charges	Electricity	Charge Subcategory	\$250 (until May 5)
Usage Charges	Weekly	Charge Subcategory	\$4285.71 = \$5*200*4.285714286 (periods)

Reservations

A Reservation has the following important attributes:

1 Reservation Code

System generated.

2 Reservation Type

Pool or Loaner

4 Status

System Codes entity RNST.

5 Equipment

The reservable equipment

6 Received Equipment

This field can be entered when it concerns a Loaner. For example, equipment under contract comes back for PM work order and in the meantime a loaner can be used to cover the time the PM requires.

7 Vehicle Type

This field can be used to describe the type of vehicle. All Vehicle Types such as SUV, Sports car, etc.

8 Rental Template

Unlike the Asset Management Services changing a template during the active period of a contract does not affect invoicing. The template is merely used to quickly define the contract. The template is actually copied to the rental contract.

9 Customer

Customers are defined in the Customer function.

10 Issue and Return

a Date / Time

Determines Hours and/or Days of the rental.

b Reading / UOM

Determines the number of miles, kilometers or any other meter reading the equipment has been used.

c Fuel Level

Determines fuel consumption

11 Calculated Fields

The system will populate these at the return of the equipment or when you click the Calculate Cost button.

- a Calculated Hours
- b Calculated Days
- c Calculated Usage
- d Calculated Fuel Usage

12 Corrected Fields

You can overwrite the calculated values when needed by entering values for the following fields.

- a Corrected Hours
- b Corrected Days
- c Corrected Usage
- d Corrected Fuel Usage

13 Buttons**a Calculate Cost**

Quickly determines the costs for this rental.

b Generate Invoice

Initiates the invoicing process and generates an invoice.

c Update Meter Readings

Enters the return reading for the equipment as a meter reading entry.

To calculate the costs the system must first calculate usage:

Calculated Hours:

- Calculated Hours = (Return Date/Time – Issue Date/Time) * 24.
- If the Hourly Invoicing Start Time is entered only consider the daily hours after this time.
- If the Hourly Invoicing End Time is entered only consider the daily hours before this time.
- Rounding is determined by the associated Rental Template. Depending on the setting for Rounding Hours the Calculated Hours will be rounded.
- Always round the result to 2 (two) decimal positions.

Calculate Days:

- Calculated Days = Return Date/Time – Issue Date/Time.
- Rounding is determined by the associated Rental Template. Depending on the setting for Rounding Days the Calculated Days will be rounded.
- Always round the result to 2 (two) decimal positions.

Calculate Usage:

- Calculated Usage = Return Reading – Issue Reading.
- If either field is blank, the system will set the Calculated Usage equal 0 (zero).
- If a physical meter is attached that has a maximum value defined then the system will try to handle rollover if the return is lower than the issue reading.

Calculate Fuel:

- Calculated Fuel Usage = Issue Fuel Level – Return Fuel Level.
- If either field is blank, the system will set the Calculated Fuel Usage equal 0 (zero).

Note: Please refer to the **Vehicle Rental** whitepaper for the Reservation Request and Review Reservation Request, for creating and reviewing reservations.

Reservation – Charge Definitions

Charge Definitions determine what you will invoice on the reservation and how you will invoice. On the reservation function, this tab is a view only tab. For rentals the Charge Categories can only be Usage Charges or One Time Charges.

Charge Definitions will be copied from the template to the Reservation automatically anytime a Contract Template is saved on the Reservation header.

Customer Contract – Adjustments

Adjustments are changes you want to apply to the invoicing outside the setup of the Reservation Charge definitions. There could be any reason to justify adjustments, including a customer disputed an invoice and you have decided to give them a \$100 credit, or equipment was returned in such bad shape that it warrants an extra charge of \$150 for unexpected repairs.

You should not confuse Adjustments on this tab with the Adjustments fields that manipulate a transaction value already discussed on the **Charge Definition** screen. The same name was chosen because in the end they all influence what is invoiced and they can add or subtract to that invoice amount. The word Adjustment nicely covers that capability.

Adjustments work very similar to the Adjustments on Customer Contract and have the following important attributes:

1 Adjustment

Reference to the **Adjustment** screen where you can define Adjustments.

2 Tax Code

If entered the system will calculate the Tax amount.

3 Adjustment Type

You can create your own codes on the **System Codes** screen (entity AJTP). The system will not let you select types that are either Invoice Discount or Contract Discount. These are protected and used by the Generate Invoices Process to handle discounts.

4 Date

The date that this Adjustment must be invoiced.

5 Status

Status of the Adjustment (System Codes entity AJST). Only approved adjustments will be selected by the invoicing process. Once invoiced the system will change the status to Invoiced and will add the invoice number on the Adjustment for future reference.

6 Quantity

Number of times the adjustment should be applied

7 Rate

Price of the adjustment

8 Total Amount = Quantity * Rate, but it is not necessary to enter any values. If Rate is blank the Total Amount is automatically set to 0 (zero). If Quantity is blank the Total Amount is automatically set equal to the entered Rate.

Reservation Examples

Vehicle Rental per Day

Vehicles are rented for a fixed price per day of \$35 excluding a daily charge of \$5 for insurance. There is also a \$0.25 charge for miles but the first 100 miles are free. Tanks must be returned full. It costs \$8 for every 10% missing from the tank. Days are rounded up.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments		
					% Before	Max.	Free Up To
Usage Charges	Daily Rent	Transaction	Yes	\$35			
Usage Charges	Daily Insurance	Transaction	Yes	\$5			
Usage Charges	Usage Based	Transaction	Yes	\$0.25			\$25
One Time Charge	Fuel Charge	Transaction	Yes	\$8			

The vehicle was issued on Monday at 10 am and was returned on Wednesday at 2 pm and was driven for 250 miles. The car came back with the tank 80% full, rather than 100%.

The Invoice will be \$173.50:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$157.50
One Time Charges	All	Charge Category	\$16
Usage Charges	Daily	Charge Subcategory	3 * \$40 = \$120
Usage Charges	Usage Based	Charge Subcategory	\$37.50
One Time Charges	Fuel Charge	Charge Subcategory	\$16

Vehicle Rental per Hour

Vehicles are rented for a fixed price per hour of \$25. There is also a daily charge of \$25 for insurance. There is also a \$0.25 charge for miles. Tanks must be returned full. It costs \$8 for every 10% missing from the tank. Days are rounded up. Hours are rounded up to half hours, but no charges are accrued between 7:30 pm and 6 am. There is a \$100 admin fee to drive the vehicle off the lot.

Define this contract as follows, but take into consideration that other ways may lead to the same result:

Charge Category	Subcategory	Charge Level	Invoice	Rate	Adjustments		
					% Before	Max.	Free Up To
Usage Charges	Hourly Rent	Transaction	Yes	\$25			
Usage Charges	Daily Insurance	Transaction	Yes	\$35			
Usage Charges	Usage Based	Transaction	Yes	\$0.25			
One Time Charge	Beginning of Contract	Transaction	Yes	\$100			
One Time Charge	Fuel Charge	Transaction	Yes	\$8			

The vehicle was issued on Monday at 10:20 am and was returned on Wednesday at 2:13 pm and was driven for 250 miles. The car came back with the tank 50% full, rather than 100%.

The Invoice will be \$1,082.50:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All	Charge Category	\$942.50
One Time Charges	All	Charge Category	\$140
Usage Charges	Hourly	Charge Subcategory	31*\$25 = \$775
Usage Charges	Daily	Charge Subcategory	\$105
Usage Charges	Usage Based	Charge Subcategory	\$62.50
One Time Charges	Beginning of Contract	Charge Subcategory	\$100
One Time Charges	Fuel Charge	Charge Subcategory	\$40

Customer Invoices

Customer Invoices are automatically generated by the Customer Invoice Driver (CIDRV) and the manually initiated regenerate option is controlled by the Customer Invoice Regenerate Driver (CIRDRV). You can find and activate these on the **Job Setup** screen. The Customer Invoice Driver is also responsible for stopping the invoicing of Customer Contracts and Reservations when they are completed. This is controlled by an organization option (CCFIDAYS), which you set to a number of days after which a completed contract will be automatically closed. The status of the contract or the rental will change to Finished once this threshold is met.

A Customer Contract revision is considered completed when the Status is "Approved" and the End Date is in the past and all invoices covering the contract period have been generated. For reservations, this is similar, but rather than approved the system Status is "Completed".

This option CCFIDAYS was introduced so that when the contract is completed there are still invoices generated to make sure that all the costs are collected, entered, and invoiced. For Customer Contracts for example there could be energy charges that must be invoiced but you are still awaiting the energy bill from your power company. Alternatively, you may get an inquiry on a previous invoice with a disputed charge. You can use this period to add a manual Adjustment to the Reservation or the Customer Contract, which will then be automatically included in the next invoice.

It is not possible to create invoices manually for customer contracts. For reservations, invoices are also created automatically, but there you also have the option to click the **Generate Invoice** button.

A Customer Invoice has the following important attributes:

1 Status

System Codes entity CIST.

2 Paid Date

Can be changed at any time when the status is Unfinished or Approved.

3 GL Date

Can be changed at any time when the status is Unfinished or Approved.

4 Customer Contact Information

Can be changed at any time when the status is Unfinished or Approved.

a Customer Contact

You can use the lookup here to list customer contacts, but you can also enter a name if nobody relevant is found on the list.

b Phone Number

c Email Address

5 Buttons

a Regenerate Invoice

You can make changes to the Invoice details. You can undo these changes with this button. You can also use this button to retry generation when processing errors were found and you have added the missing exchange rate for example, or when you created and approved a new revision of the contract and work order booked hours are now additionally invoiced.

b Create New Revision

Creates a new revision. For example, after you have discussed an invoice with a customer and have decided some changes are in order.

The Invoice is broken down into five levels of details as follows:

1	Customer Invoice screen - Invoice Total Amount
2	Contract Items tab - Invoice Amount of each individual Contract Item
3	Invoice Details tab - Invoice Amount per Contract Item per Charge Category
4	Invoice Details tab - Invoice Amount per Contract Item per Charge Subcategory
5	Invoice Details tab - Invoice Amount per Contract Item per source transaction

Note: As indicated above it is possible to create user codes for the Usage Charges and for One Time Charges. These could lead to confusion during the roll up process of costs from the Transaction Adjustment level to the Subcategory Adjustment level. The easiest way to describe this is using an example.

If you have a contract with one Contract Item with the following setup:

Charge Category	Subcategory	Charge Level	Invoice	Rate
Usage Charges	Monthly Rent	Transaction	Yes	\$500
Usage Charges	Monthly Insurance	Transaction	Yes	\$25
Usage Charges	Monthly Service Charge	Transaction	Yes	\$75

The Invoice will be for \$600.00 and show the following details:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All Usage Charges	Charge Category	\$600
Usage Charges	<i>System Determined</i>	Subcategory	\$600
Usage Charges	Monthly Rent	Transaction	\$500
Usage Charges	Monthly Insurance	Transaction	\$25
Usage Charges	Monthly Service Charge	Transaction	\$75

Because there is no charge definition record on the contract for this level, the subcategory for this invoice will be determined automatically by the system based on the System Default flag selected in the System Codes. Therefore, if you selected Monthly Rent as your System default you will find this in your Subcategory for the invoice line on Subcategory Adjustment level. In order to identify the group of monthly charges it would be better if you left the System Default flag selected for the Monthly code. The same applies to the other system codes.

Another example where you selected the charge definition on the contract as follows:

Charge Category	Subcategory	Charge Level	Invoice	Rate/%
Usage Charges	Monthly Rent	Transaction	Yes	\$500
Usage Charges	Monthly Insurance	Transaction	Yes	\$25
Usage Charges	Monthly Service Charge	Transaction	Yes	\$75
Usage Charges	<i>Monthly Insurance</i>	Subcategory	Yes	+10%

The Invoice will be for \$660.00 and show the following details:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All Usage Charges	Charge Category	\$660
Usage Charges	<i>Monthly Insurance</i>	Subcategory	\$660
Usage Charges	Monthly Rent	Transaction	\$500
Usage Charges	Monthly Insurance	Transaction	\$25
Usage Charges	Monthly Service Charge	Transaction	\$75

This same invoice would look “better” if you did your original setup of the contract as follows:

Charge Category	Subcategory	Charge Level	Invoice	Rate/%
Usage Charges	Monthly Rent	Transaction	Yes	\$500
Usage Charges	Monthly Insurance	Transaction	Yes	\$25
Usage Charges	Monthly Service Charge	Transaction	Yes	\$75
Usage Charges	<i>Monthly</i>	Subcategory	Yes	+10%

Customer Invoices – Contract Items

All Contract Items will be listed on this screen and for each it will indicate the invoice amount, which on this level is the total of all invoice detail lines for this Contract Item. If required you can enter a value for the Adjusted Net, which will roll up to the invoice level instead of the Net Amount, if entered. This is the easiest way to adjust the charges for a Contract Item.

Customer Invoices – Invoice Details

All Invoice Details will be listed on this tab. Invoice details can be derived from charge definitions and from adjustments as follows:

- If the Charge Category is populated the Invoice Detail line originated from a charge definition record. You will find records on all three Charge Levels and you can use any of these levels for searching. The three Charge Levels again are:
 - **Charge Category Adjustment**
Search on this level to determine quickly how much was spent on work orders for a Contract Item.
 - **Subcategory Adjustment**
Search on this level to determine quickly how much was spent on stock items for that same Contract Item.
 - **Transaction Adjustment**
Search on this level to determine quickly stock issue transactions for that same Contract Item.
- If the Adjustment is populated the Invoice Detail line originated from an adjustment or, depending on the type, a discount on invoice level or on contract level.

There are four fields on this tab that can be entered:

- Adjusted Quantity, Adjusted Periods and Adjusted Price can be entered on Transaction Adjustment level to influence the invoicing of detailed transactions. Use this feature if you want to change the 10 bearings you issued to 8, because the customer told you two broke within the first 24 hours.
- Adjusted Rollup can be entered on Charge Category or Subcategory Adjustment level to influence the invoicing of rolled up transactions. Use this feature if you do not want to change all the detail transactions, but rather influence the sum of these detail transaction. For example, rather than changing all stock issues to remove \$500 worth of charges, simply enter one new Adjusted Rollup for \$500 less than calculated for the Stock Items Subcategory.

All Adjusted values you enter or remove will cause the system to recalculate the invoice values every step of the way to the top of the tree, which is the invoice amount.

Customer Invoices – Generation Errors

On this tab, you can find a list of all the processing errors the system encountered during the invoice generation process. The Customer Invoice status will be set to Processing Error if data is written to this tab.

If you encounter errors here, you can try to fix them. For example, if a sales price is missing, you can add the sales price, if an exchange rate is missing you can add the exchange rate, etc. Once you believe you have solved all the issues you can do one of two things:

- Do nothing, in which case the system will automatically try to regenerate the invoice in the next run of the Generate Invoices Process.
- Click on the Regenerate Button on the **Customer Invoices** screen and get an immediate refresh of the invoice.

The Invoice will be for \$660.00 and show the following details:

Charge Category	Subcategory	Charge Level	Amount
Usage Charges	All Usage Charges	Charge Category	\$660
Usage Charges	Monthly	Subcategory	\$660
Usage Charges	Monthly Rent	Transaction	\$500
Usage Charges	Monthly Insurance	Transaction	\$25
Usage Charges	Monthly Service Charge	Transaction	\$75

Organization options and install parameters

The following Organization Options are relevant for customer contracts and reservations:

Option	Description
CCDUPLCI	<p>At customer contract approval, the system checks if equipment or projects are already used on another active contract with overlapping periods.</p> <ul style="list-style-type: none"> • If "ON" the system does not allow the use of the same equipment or projects more than once. • If "OFF" the system does not perform this check. • If "WARNING" the system will ask the user what to do. • If "WARNING-CC" the system will also consider the charge categories on the other contract and only ask the user if those overlap as well.
CCFIDAYS	<p>Number of days after which no customer invoices will be generated. For Customer Contracts this is after the End Date. For Rentals after the Completed Date. The system will change the Status of the contract or the rental to Finished once it hits this date.</p> <p>Note that the purpose of this parameter is to allow full completion of the contract. Booked hours and other costs or adjustments covering the contract period, but entered in the system after the contract end date, are still invoiced this way.</p>
CCGENMAX	<p>Threshold at which the customer invoice regeneration process starts in asynchronous (background) mode: If the number of contract items multiplied with the number of charge definitions associated to the contract is higher than this setting the process runs asynchronous and the process will be queued. Otherwise the process runs synchronous and the user must wait for the process to finish.</p> <p>Make sure you activate Customer Invoice Regenerate Driver (CIRDRV) on the Job Setup screen.</p>