



# **Configuring Fleet Management in SAP R/3 Enterprise**

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**SAP America**

THE BEST-RUN BUSINESSES RUN SAP



# Content

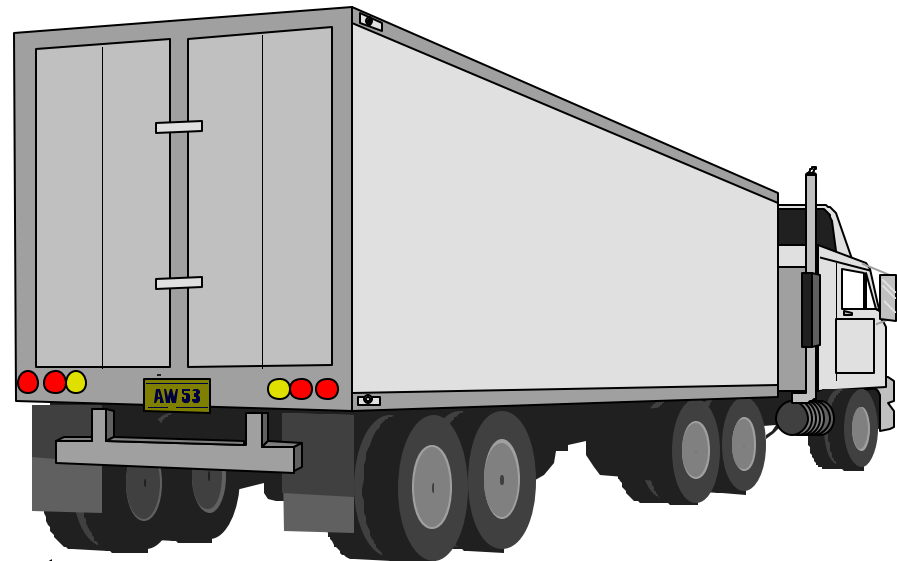
- **Overview**
- **Master data**
- **Units of measure**
- **Consumption calculation**
- **Reference object screen**
- **Fuel entry**
- **PMIS (S114)**
- **Summary**

# What is fleet management

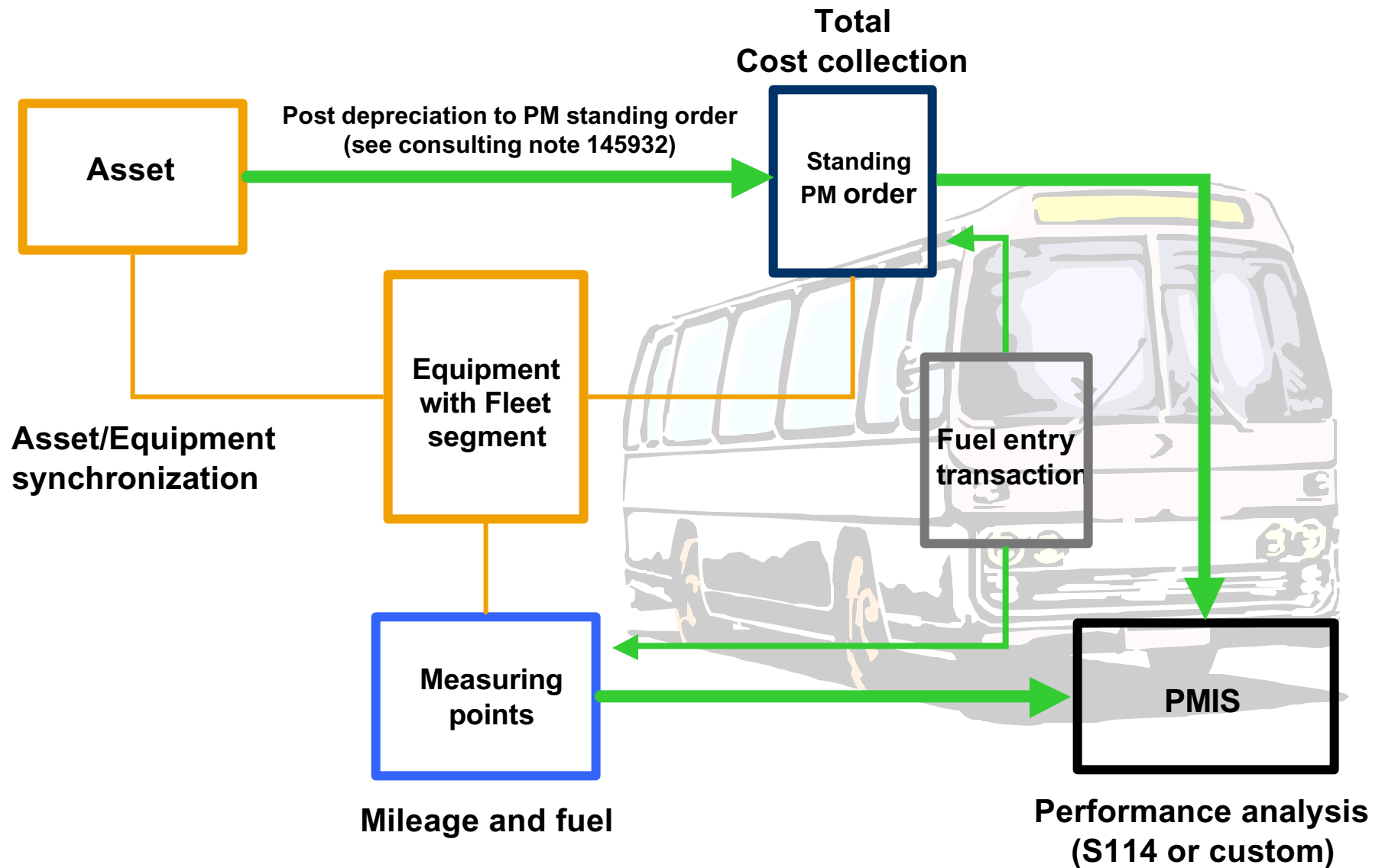
Fleet management is a solution, not a module

Contributions from several SAP modules:

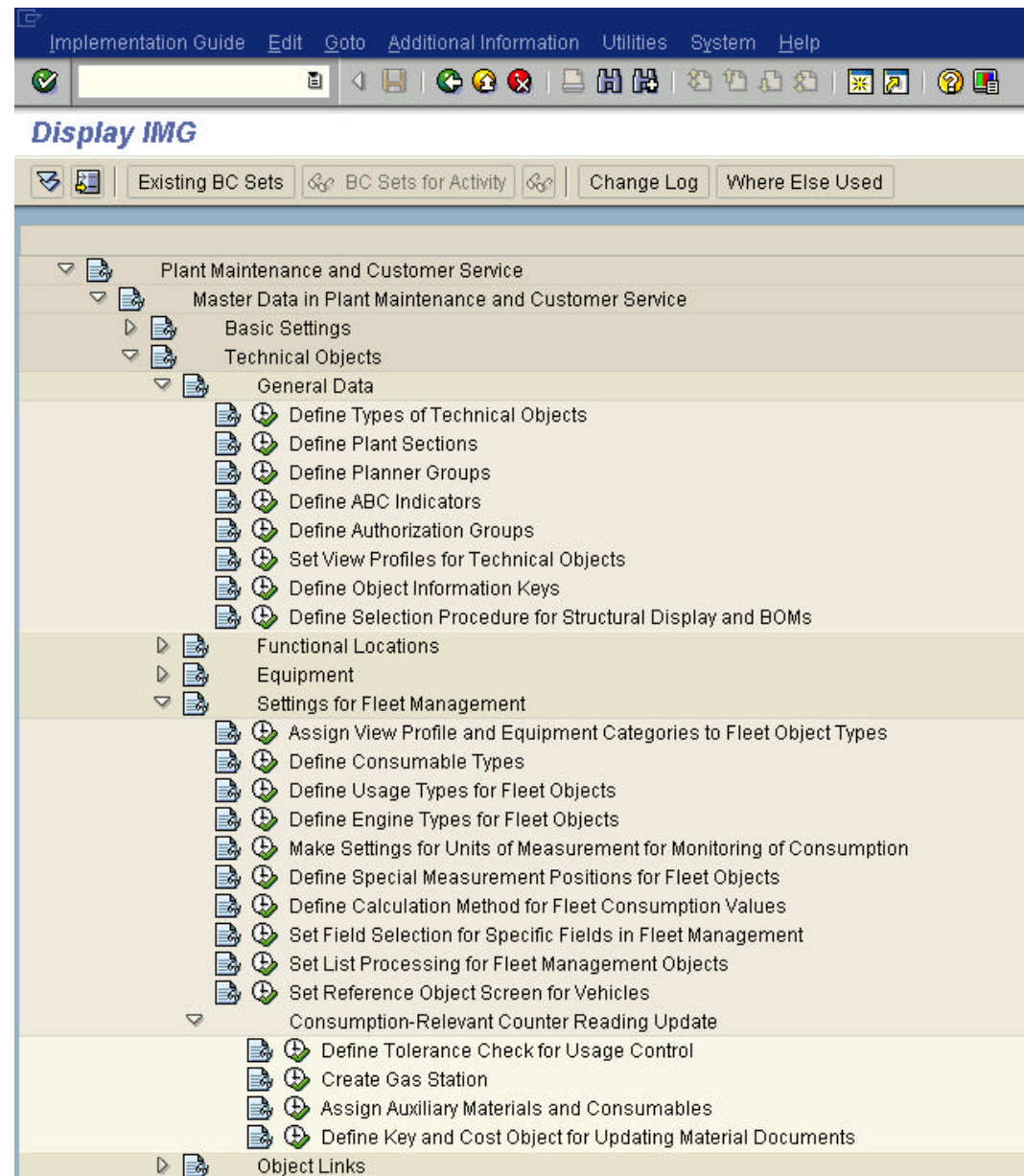
- Plant Maintenance
- Asset Accounting
- Financials
- Controlling
- Materials Management
- Human Capital Management
- .....



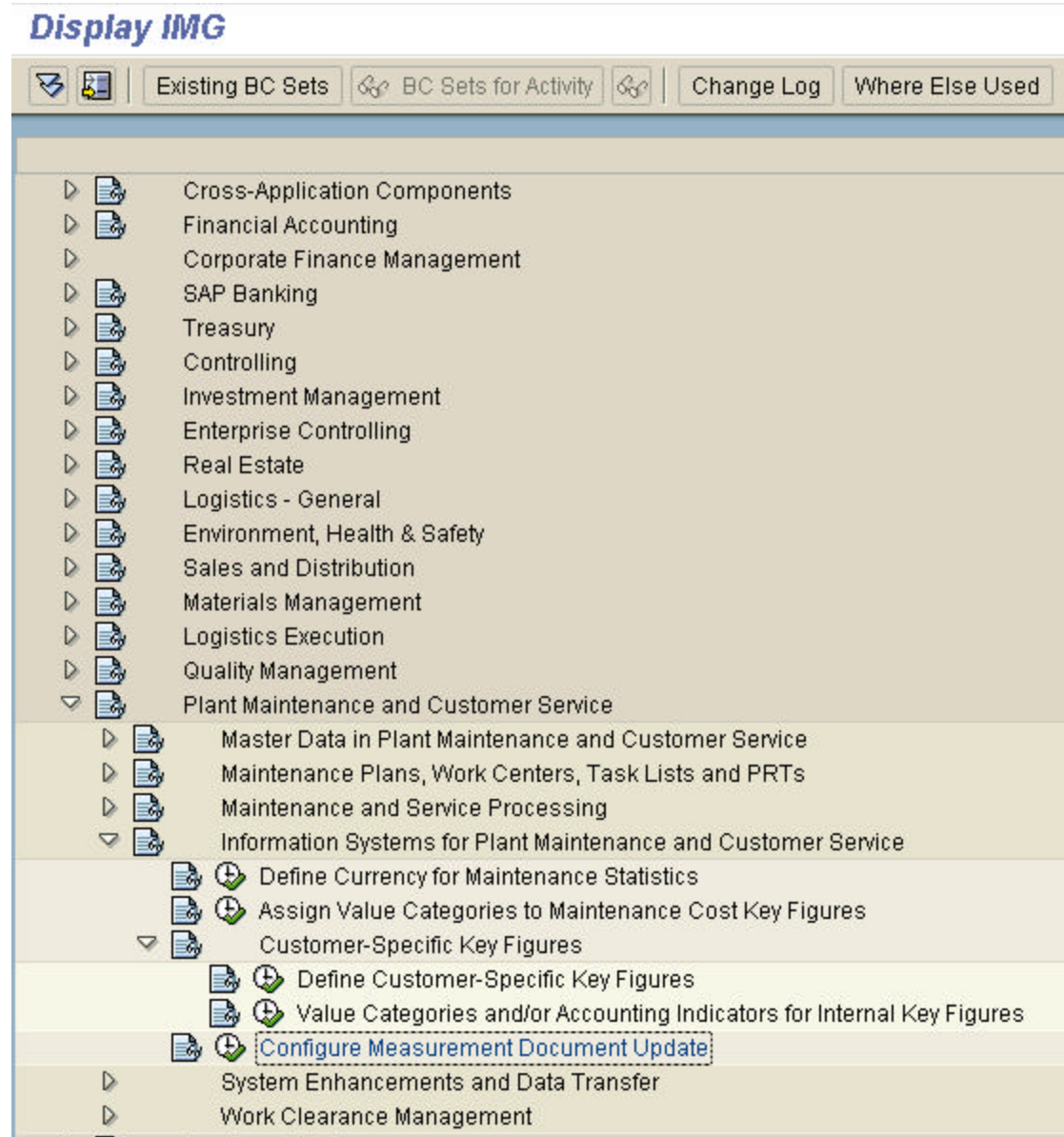
# Typical fleet model



# Transaction configuration



# Reporting configuration



# Content

- **Overview**
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# View profiles

**Change View "Definition of view profiles": Overview**

New Entries

Dialog Structure

- Definition of view profiles
  - Activity and layout of views
  - Icons and texts of view

Screen grp	Profile	Profile
H2 Screen group equipment data	FLT01	Fleet 01
H2 Screen group equipment data	IT	IT-Equipment
H2 Screen group equipment data	MACH	All Kinds of Machines
H2 Screen group equipment data	MNEW	
H2 Screen group equipment data	SEQ	Service - equipment
H2 Screen group equipment data	TEST	
H2 Screen group equipment data	WP	Workplaces
H3 Screen group functional location da...	SFL	Service - functional location
H4 Screen group fleet object data	SFZ	Equipment - vehicle

**Fleet are simply equipment with a fleet profile allocated to the equipment category.**

# Fleet view profile

**Change View "Activity and layout of views": Overview**

New Entries

Dialog Structure

- Definition of view profiles
  - Activity and layout of v
  - Icons and texts of vie

Screen group: H4 Screen group fleet object data

View profile: SFZ

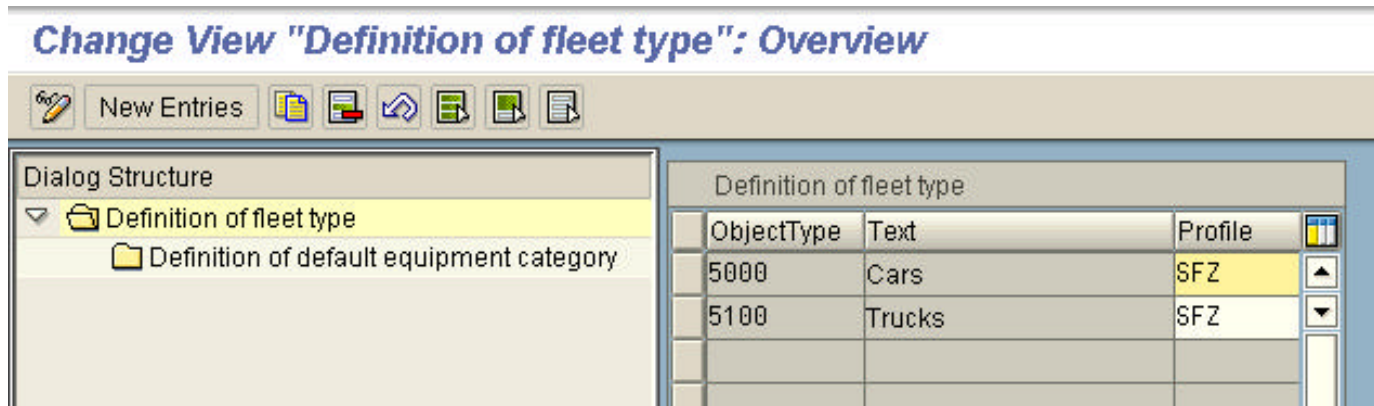
Profile desc.: Equipment - vehicle

Activity and layout of views

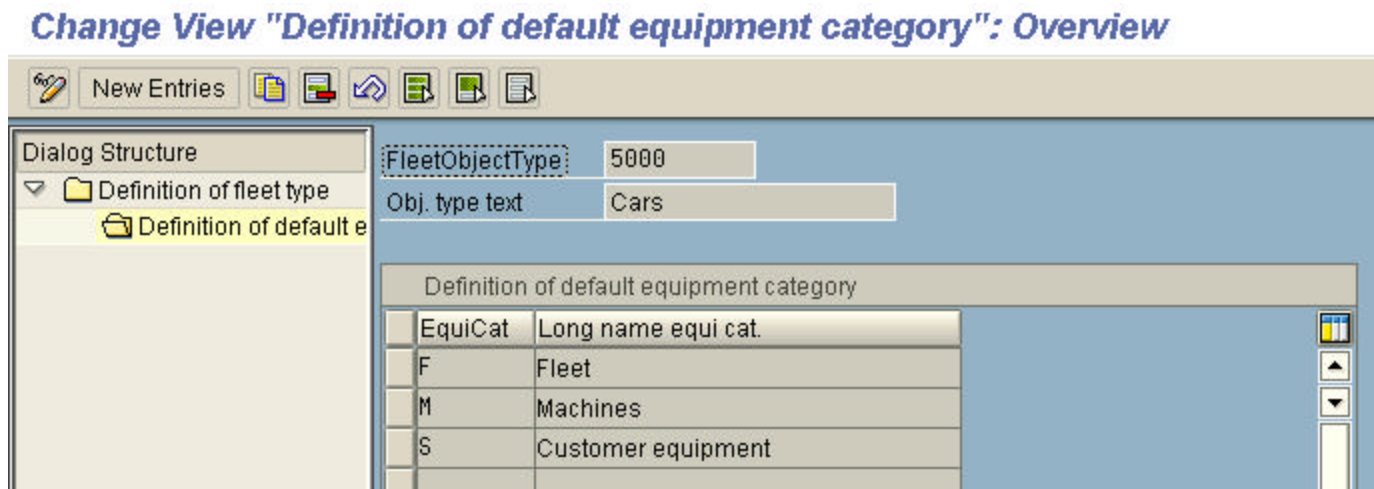
Or...	Descriptn	Tab active	S...	S...	S...	S...
130	Vehicle ID/Measmnts	<input checked="" type="checkbox"/>	200	205	210	215
140	Vehicle Technology	<input checked="" type="checkbox"/>	220	225	230	

**The screen group for fleet makes the fleet sub-screens available for configuration.**

# Categories and Object types



**View profile allocation per fleet object type.**



**Default equipment categories can be defined for fleet Object types.**

# Fleet user defined attributes

*Change View "Fluid Types": Overview*

Fluid Types	
Fluid type	Text
CPG	Compressed Natural Gas
DI	Diesel
GAS87	Gasoline, Regular
GAS89	Gasoline, Plus
GAS93	Gasoline, Super

*Change View "Fleet Usage": Overview*

Fleet Usage	
Usage indicator	Text
	Leased
P	Private usage allowed
R	Rental vehicle

**Fluid types are used to default materials in the fuel entry transaction.**

**Engine Type and Fleet Usage are used to group fleet objects.**

*Change View "Engine Type": Overview*

Engine Type	
Engine type	TypeTxt
D6	Diesel, 6 cylinders
D8	Diesel, 8 cylinders
G4	Gasoline, 4 cylinder
G6	Gasoline, 6 cylinder
G8	Gasoline, 8 cylinder

**There are user exits specifically for the FLEET segment of the equipment record.**

- **ITOB0003 - PM: Customer Include subscreen for fleet object data**
- **ITOB0004 - PM: Customer Exit fleet identification data: Checks**

**The FLEET table has an include CI\_FLEET for extending the FLEET master data.**

**These fields are available in the fleet list displays**

# Content

- **Overview**
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- **Units of measure**
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# Units of measure

**The units of measure are key to the correct calculation of consumption.**

**All uom's are defined as a derivation of the SI unit for the dimension concerned e.g. length is meter but can have kilometer or mile unit.**

**Measurement documents are stored in the unit of the dimension SI unit. This makes it exceptionally easy to work with units of measure.**

# Consumption (Inverse Area)

## Units of Measurement: Initial Screen

Measurement unit maintenance initial screen

Dimensions

ISO codes

Units of measurement    Inverse area

## Change Units of Measurement of Dimension Inverse area: Overview

Declare SI unit

Unit	Commercial	Technical	Meas. unit text	
KML	KML	km/l	km/l	
M2I	M-2	1/M2	1/M2	SI unit
MPG	MPG	MPG US	Mil/Gal(US)	

# Key units (Inverse Area)

## Change Units of Measurement of Dimension Inverse area: Details

Int. meas. unit: **MPG**

**Display**

Commercial	<b>MPG</b>
Technical	MPG ...
Decimal places	
float. point exp.	

**Measurement unit text**

Miles per gallon (US)  
Mi/Gal(US)

**ALE/EDI**

ISO code:   
☐ Primary code

**Conversion**

Numerator	201,168
Denominator	473,168
Exponent	6
Additive constant	
Decimal pl. rounding	3
Unit of meas.family	

**Application parameters**

☒ Commercial meas.unit  
☐ Value-based commt

## Change Units of Measurement of Dimension Inverse area: Detail

Int. meas. unit: **KML**

**Display**

Commercial	<b>KML</b>
Technical	km/l
Decimal places	
float. point exp.	

**Measurement unit text**

Kilometer per Liter  
km/l

**ALE/EDI**

ISO code:   
☐ Primary code

**Conversion**

Numerator	1
Denominator	1
Exponent	6
Additive constant	
Decimal pl. rounding	2
Unit of meas.family	

**Application parameters**

☒ Commercial meas.unit  
☐ Value-based commt

# Consumption (Area)

## Units of Measurement: Initial Screen

Measurement unit maintenance initial screen

Dimensions

ISO codes

Units of measurement

## Change Units of Measurement of Dimension Area: Overview

Declare SI unit

Unit	Commercial	Technical	Meas. unit text	
CM2	CM2	cm2	cm2	
FT2	FT2	ft2	Square ft	
GLM	GPM	GPM US	Gal/Mi(US)	
LHK	LHK	l/hkm	l/100 km	
M2	M2	m2	m2	SI unit

# Key units (Area)

## Change Units of Measurement of Dimension Area: Details

Int. meas. unit: GLM

Display

Commercial	GPM
Technical	GPM ...
Decimal places	
float. point exp.	

Measurement unit text

Gallons per mile (US)

Gal/Mi(US)

ALE/EDI

ISO code

☐ Primary code

Conversion

Numerator	473,168
Denominator	201,168
Exponent	6 -
Additive constant	
Decimal pl. rounding	3
Unit of meas.family	

Application parameters

☒ Commercial meas.unit

☐ Value-based commt

## Change Units of Measurement of Dimension Area: Details

Int. meas. unit: LHK

Display

Commercial	LHK
Technical	l/hkm
Decimal places	
float. point exp.	

Measurement unit text

Liter per 100 km

l/100 km

ALE/EDI

ISO code

☐ Primary code

Conversion

Numerator	1
Denominator	1
Exponent	8 -
Additive constant	
Decimal pl. rounding	3
Unit of meas.family	

Application parameters

☒ Commercial meas.unit

☐ Value-based commt

# Volume rate of flow

## Units of Measurement: Initial Screen

Measurement unit maintenance initial screen

Dimensions

ISO codes

Units of measurement      Volume rate of flow

## Change Units of Measurement of Dimension Volume rate of flow: Overview

Declare SI unit					
Unit	Commercial	Technical	Meas. unit text		
GPH	GPH	GPH US	Gal/hr US		
LH	L/H	l/h	Liter / h		
M3S	M3S	m3/s	m3/s	SI unit	

# Key units (Volume flow)

## Change Units of Measurement of Dimension Volume rate of flow: Detail

Int. meas. unit: **GPH**

**Display**

Commercial	GPH
Technical	GPH ...
Decimal places	
float. point exp.	

**Measurement unit text**

Gallons per hour (US)
Gal/hr US

**ALE/EDI**

ISO code:

☐ Primary code

**Application parameters**

☒ Commercial meas.unit

☐ Value-based commt

**Conversion**

Numerator	3,785,344
Denominator	3,600
Exponent	9-
Additive constant	
Decimal pl. rounding	3
Unit of meas.family	

## Change Units of Measurement of Dimension Volume rate of

Int. meas. unit: **LH**

**Display**

Commercial	L/H
Technical	l/h
Decimal places	
float. point exp.	

**Measurement unit text**

Liter per hour
Liter / h

**ALE/EDI**

ISO code:

☐ Primary code

**Application parameters**

☒ Commercial meas.unit

☐ Value-based commt

**Conversion**

Numerator	1
Denominator	3,600,000
Exponent	
Additive constant	
Decimal pl. rounding	
Unit of meas.family	

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## How it works

**The simplest way to describe the consumption calculation is:**

**Fuel unit / Work unit**

**The fuel unit may be volume or mass**

**The work unit may be distance or time.**

**Note: All units are based on SI and converted as required. If the unit of measure has the inverse dimension the system will take that into account in standard calculations. PMIS calculated key figures will need to be correctly defined.**

**See SAP support note 563832 for detailed explanation as to how the consumption calculation works.**

## Valid consumption units (Distance)

**Change View "Definition of consumption unit group": Overview**

New Entries

Dialog Structure

- Definition of consumption unit group
  - Definition of valid consumption units

SI unit cnsmptn	Text unit group
M2	VOLUME CONSUMPTION / DISTANCE
M3S	VOLUME CONSUMPTION/TIME

Define SI unit for dimension of calculation.

Define units for calculation.  
Must have the same dimension as the SI unit.

**Change View "Definition of valid consumption units": Overview**

New Entries

Dialog Structure

- Definition of consumption unit group
  - Definition of valid consumption units

SI unit cnsmptn: M2

Display unit	Unit text
LHK	l/100 km
MPG	Mil/Gal(US)

# Valid consumption units (Time)

## Change View "Definition of consumption unit group": Overview

Dialog Structure

- Definition of consumption unit group
  - Definition of valid consumption units

Definition of consumption unit group

SI unit cnsmptn	Text unit group
M2	VOLUME CONSUMPTION / DISTANCE
M3S	VOLUME CONSUMPTION/TIME

## Change View "Definition of valid consumption units": Overview

Dialog Structure

- Definition of consumption unit group
  - Definition of valid consumption units

SI unit cnsmptn: M3S

Definition of valid consumption unit

Display unit	Unit text
GPH	Gal/hr US
L/H	Liter / h

# Counter definition

**Change View "Definition: Counter": Overview**

New Entries

Dialog Structure

- Definition: Counter
  - Counter Purpose

Definition: Counter	
MeasPos.	Text
DISTANCE	Usage-related distance counter
FUEL	Usage-related fuel counter
HOURLMETER	Operating hours
ODOMETER	Distance travelled
OIL	Oil consumed

**Measuring point positions are used to determine measuring point usage. (field PSORT)**

**Each measuring point position is assigned one or more purposes that control how the position is utilized.**

**Change View "Counter Purpose": Overview**

New Entries

Dialog Structure

- Definition: Counter
  - Counter Purpose

Counter Purpose	
Usage	
Consumption-relevant distance counter	
A Replacement-relevant distance counter	

MeasPosition: ODOMETER

Position - text: Distance travelled

## Valid counter purposes.

**New Entries: Overview of Added Entries**

MeasPosition ODOMETER  
Position - text Distance travelled

Dialog Structure

- Definition: Counter
  - Counter Purpose

Counter Purpose

Usage

- 1 Consumption-relevant distance counter
- 2 Consumption-relevant time counter
- 3 Consumption-relevant fuel counter
- A Replacement-relevant distance counter
- B Replacement-relevant time counter
- K Primary fuel counter
- L Secondary fuel counter
- M Oil counter

# Consumption calculation key

## Change View "Fleet Consumption Calculation Keys": Overview

Fleet Consumption Calculation Keys								
	CalcMethod	Text	DisplUnit	Unit text	Fuel counter	Primary counter	DaysShort	Tage lang
	A	Liters/100 KM	LHK	l/100 km	FUEL	DISTANCE	10	30
	B	MPG	MPG	Mi/Gal(US)	FUEL	DISTANCE	10	30
	G	Gallons per Hour	GPH		FUEL	HOURLY	90	9999
	L	Liters per 100 Km	LHK		FUEL	ODOMETER	90	9999
	M	Miles per Gallon	MPG		FUEL	ODOMETER	90	9999

**Specify the following:**

**Unit for consumption**

**The Fuel counter**

**The Primary counter**

**Short term average calculation**

**Long term average calculation**

**The primary counter is the counter used to measure the “effort” performed e.g. miles traveled, hours operated.**

# Replacement relevant counters

Replacement data	
Replacemnt date	07.09.2005
OdomRdgReplmen	50020.0
HourReplacement	
MeasrgPos.	Primary Counter
ODOMETER	20.0 MI

**When replacement relevant counters are defined the current readings are displayed in the master data screen.**

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# Set reference object screen for vehicle

## Change View "Reference Object Screen for Vehicle": Overview

Sc...	Field Name
0150	LICENSE_NUM

Fleet identification field to be used as reference.

The field is only valid for display on reference object screen 0150.

## Change PM Notification: Fleet recall notice

Notification: 10000907 RN: brake line replacement

Status: NOPR

Order:

Recall Details | Repair task | Repair details

Reference object

Plate no.: EPL1221 Distance travelled: 12100 mi

Equipment: 10006060 Honda CR-V LX 2001

Subject

Coding: VEHICLE 1 Urgent safety issue

Description: Brake line replacement

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**The fuel entry transaction performs the following functions:**

- **Enters measurement documents for counters.**
- **Performs goods movements if required.**
- **Posts costs to assigned object (Standing order, Settlement order WBS Element, Cost center, Asset).**

**Transaction is “IFCU”.**

# Fuel entry (Transaction IFCU)

**Consumption-Relevant Counter Reading Recording**

Additional Measurement Documents

Equipment 10006077 SUV, Ford Escape

GasStation 003 New York

MeasTime 14.09.2003 23:08:57 CalculMethod M Miles per Gallon

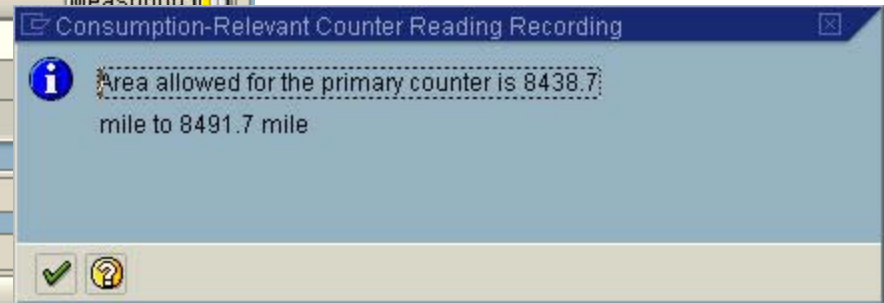
**Consumption**

Description	C..	P..	S..	O..	Consumed Qty	Meas....	Fluid type	Measuring
Usage-related fuel counter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		gal us	GAS87	

**Meter Readings**

Description	D..	C..	T..	S..	Counter reading	Last CntrReadg
Distance travelled	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		25500.0mi 11311

**Warning or error if tolerance breached.**



Transaction “IFCU” is used for individual vehicle fuel entry.

This transaction utilizes BAPI’s and can be used as an example for a user developed entry screen for mass entry.

# Tolerance and Gas station

## Change View "Tolerance for Usage Control": Overview

Tolerance for Usage Control					
	CTolerance Descriptn	S	P...	N...	MT
A	10 Percent Deviation	<input checked="" type="checkbox"/>	10	10	I Information
B	30 Percent Deviation	<input type="checkbox"/>	30	30	I Information
C	50 Percent Deviation	<input type="checkbox"/>	50	50	W Warning

Tolerance checks are used to determine if entered counter readings are consistent with the average reading +/- the tolerance defined.

Gas stations are defined storage locations within a plant. Materials can be defined for each consumable per gas station with a default value designated.

## Change View "Gas Stations": Overview

Gas Stations			
GasSt	GasStation	Plant	Storage Lo...
001	Hamburg	1000	0001
002	Dresden	1200	0088
003	New York	3000	0088

# Fuel entry parameters

## Change View "Material Assignment to Aux.Materials & Consumables (Veh

Material Assignment to Aux.Materials_Consumables (Vehicle)				
Fluid type	Material	GasSt	DefaultMaterial	
DI	DIESEL	001	<input checked="" type="checkbox"/>	
DI	DIESEL	002	<input checked="" type="checkbox"/>	
DI	DIESEL	003	<input checked="" type="checkbox"/>	


**Default materials for fluid types.**

**Default cost posting for fuel issue.**

## Change View "Goods Movement and Account Assignment for Usag

Goods Movement and Account Assignment for Usage Transaction										
MatCon	Goods movement	Code	GI-MT	MT-GI...	C	W	A	S	S	
A	GM to Asset	03	241	242	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	
B	GM to Settlement Order	03	261	262	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
C	GM to Cost Center	03	201	202	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
P	GM to WBS Element	03	221	222	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
S	GM to Standing Order	03	261	262	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	

## Where to set the defaults

Fuel and lubricants			
Primary fuel	GAS87	Gasoline, Regul	FUEL
Secondary fuel			
Oil type			
Mat.Consumption	S	GM to Standing Order	Consumpt.Toler. B 0 Percent Deviat...
CalculMethod	M	Miles per Gallon	

**The fuel and lubricants sub-screen (230) is used to set the default values for entry.**

**If it is missing check your fleet view profile.**

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# PMIS counter update

Uses Business Transaction Event (BTE) interface to update communication structure.

Transaction FIBF

Need to create initialization reading to ensure accuracy.

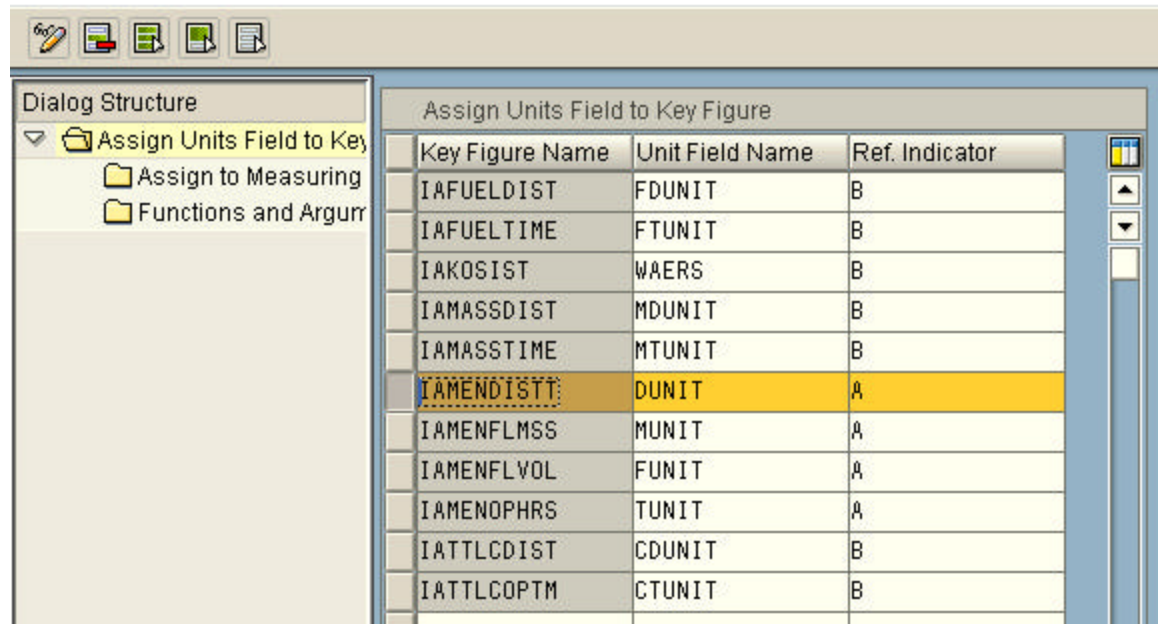
*Change View "Application components per Publish & Subscribe interface"*

Event	Ctrl	Appl.	Function module
MGV00100	UPS		E1UPSKEY_APPEND
MGV00200	UPS		E1UPSKEY_CHECK
PM000040	PM		PMIS_MEASUREM_DOC_POST
UPS00010			CRWB_BADI_CVVCM_CALLBACK_UPS
VFU00100	UPS		E1UPSKEY_APPEND
VFU00200	UPS		E1UPSKEY_CHECK
VKOA0100	UPS		E1UPSKEY_APPEND

# Key figure definition

- A: Key Figure is updated  
B: Key figure is calculated

## New Entries: Overview of Added Entries



Key Figure Name	Unit Field Name	Ref. Indicator
IAFUELDIST	FDUNIT	B
IAFUELTIME	FTUNIT	B
IAKOSIST	WAERS	B
IAMASSDIST	MDUNIT	B
IAMASSTIME	MTUNIT	B
IAMENDISTT	DUNIT	A
IAMENFLMSS	MUNIT	A
IAMENFLVOL	FUNIT	A
IAMENOPHRS	TUNIT	A
IATTLCDIST	CDUNIT	B
IATTLCOPTM	CTUNIT	B

**Define key figures to be calculated**

**Define fields and function module**

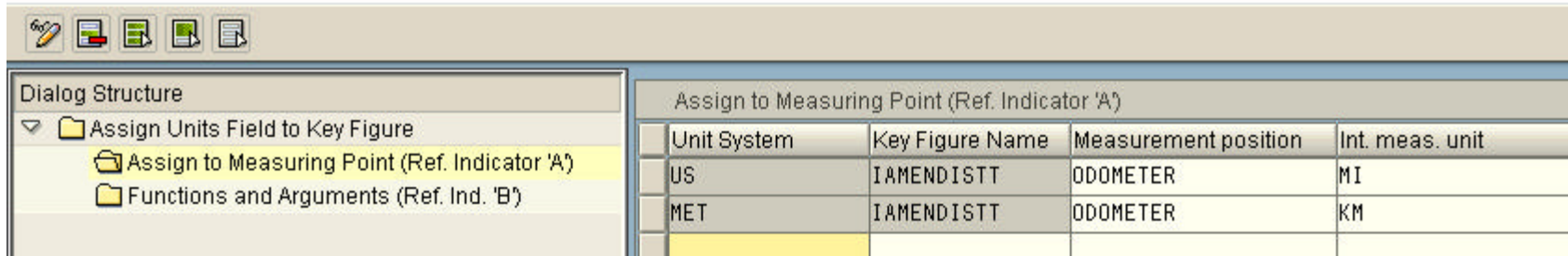
- Standard calculations supplied are metric

**User defined calculations possible**

- See note 662197

# Key figure value determination

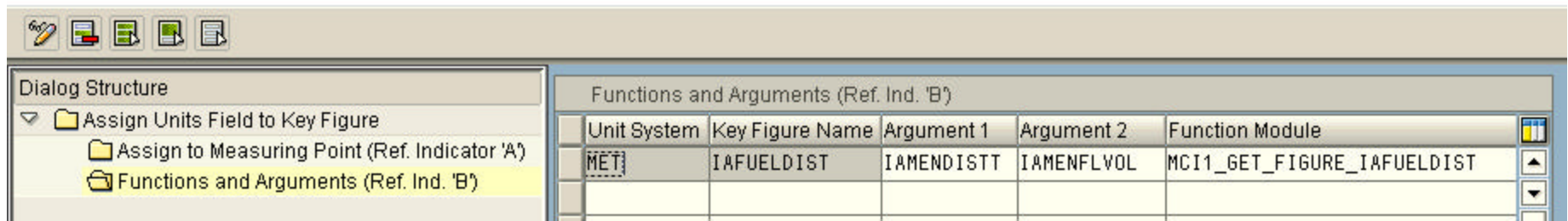
## New Entries: Overview of Added Entries



This screenshot shows the 'Assign to Measuring Point (Ref. Indicator 'A')' dialog in SAP. The 'Dialog Structure' on the left has 'Assign to Measuring Point (Ref. Indicator 'A')' selected. The main table lists unit systems and their corresponding key figure names and measurement positions.

Unit System	Key Figure Name	Measurement position	Int. meas. unit
US	IAMENDISTT	ODOMETER	MI
MET	IAMENDISTT	ODOMETER	KM

## New Entries: Overview of Added Entries



This screenshot shows the 'Functions and Arguments (Ref. Ind. 'B')' dialog in SAP. The 'Dialog Structure' on the left has 'Functions and Arguments (Ref. Ind. 'B')' selected. The main table lists unit systems, key figure names, and function modules.

Unit System	Key Figure Name	Argument 1	Argument 2	Function Module
MET	IAFUELDIST	IAMENDISTT	IAMENFLVOL	MCI1_GET_FIGURE_IAFUELDIST

**Provision for multiple units for calculation.  
Useful for companies operating in different countries.**

**US calculations are missing and need to be added as per note 662197.**

## S114 (Transaction MCIZ)

**Multiple unit systems  
can be setup and  
selected at time of  
reporting.**

**Vehicle Consumption Analysis: Selection**

Icons: [Clock] [3D] [Print] [Download] [Help] [SelectVers.] [User settings] [Standard drilldown]

**Chars**

Unit System	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Maintenance plant	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Equipment category	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Technical obj. type	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Planning plant	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Manufacturer	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Model number	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Construction year	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>
Equipment	<input type="text"/>	to	<input type="text"/>	<input type="button" value="→"/>

**Analysis Period**

Month	<input type="text" value="07.2003"/>	to	<input type="text" value="09.2003"/>	<input type="button" value="→"/>
-------	--------------------------------------	----	--------------------------------------	----------------------------------

**Parameters**

Analysis Currency	<input type="text"/>
Exception	<input type="text"/>

# S114 output

**Vehicle Consumption Analysis: Drilldown**

Unit System US

No. of MaintPlant: 1

MaintPlant	Miles/Kms	Fuel Volume	Consump. Dist.	Costs per Route	Total act.costs
Total	11,500 MI	560 GAL	20.536	0.168	1,932.71 USD
New York	11,500 MI	560 GAL	20.536	0.168	1,932.71 USD

Calculations are performed at line level.

Calculated value totals are also calculated rather than summed as in standard columns.

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- **Ensure your units of measure are correct**
- **Follow the sequence of the IMG**
- **Reference objects only work on screen 0150**
- **Create your own key figure calculations**
- **Don't be afraid to explore**
- **Utilize BAPI's if needed for mass entry programs**

## Contacts



**For more further information please contact...**

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