

Classification and SAP EAM

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Feb. 25 , 2014

The SAP logo is located in the bottom left corner of the slide. It consists of the letters 'SAP' in a bold, white, sans-serif font, set against a blue rectangular background with a white diagonal line.

Agenda

What has gone before

What is the classification system

- Characteristics
- Class Type
- Classes

EAM Master Data

- Equipment Master
- Functional Location
- Catalog Profile
- Measurement Documents



What has gone on before

Business case for recording failures

Increasing business support for Reliability for profitability

Changing regulatory environment

Industry Groups are becoming increasingly active in this topic

A more graphical view

Social awareness

Value Case - Using ISA-TR84.00.04 Part 1 Appendix R for Tier 3 & 4 Data

Tier 1 & 2 events are unacceptable

ISA-TR84.00.04 Part 1 Appendix R for Tier 3 & 4 Data gives us greater event counts

May need to look at BPCS-IPL



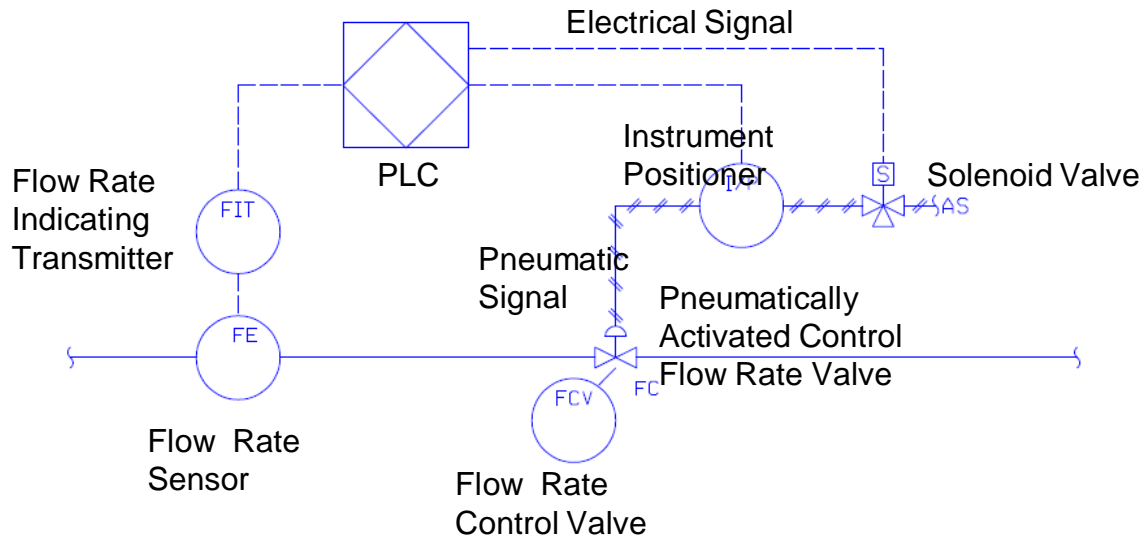
How do we set up our systems / master data to facilitate reporting failures?

Overview of Functional Locations, Equipment, Bills of Material

- **Functional Locations**
- **Equipment** + Code Lists
- **Bills Of Material**
- **Measurement Points**
- **Work Centers**
- **Partners**
- **Serial Numbers**
- **Permits**
- **Warranties**

Representation: Example: Flow Loop I – PID Diagram

Functional Locations, Equipment, and Bill of Material



Function Location	Floc 2	Equipment	BOM
Flow Loop 1			
	Electrical Loop	PLC	Sensor
			Flow Rate Transmitter
			Instrument Positioner
			Solenoid Valve
	Pneumatic Loop	Control Flow Rate Valve	

Pro/Con	
Pro	Detail Reporting Capabilities functional location, equipment & assembly level
Pro	Implementation history
Con	Complicated to implement

Notification: Additional Vales Recorded by using Classification

The screenshot displays the SAP PM Notification interface. The main window is titled "Create PM Notification: Malfunction report" and shows a notification with ID 10002105, status OSNO, and description "Leaking". A dialog box titled "Create PM Notification: Item Details" is open, showing classification information for a pump assembly. The classification is "SAFETYSYSTEM" with a description of "Safety Sytems". The "Spurious Trip" field is set to "No", which is circled in red. The dialog box also shows "Code group" as "PUMP/100" and "Damage" as "Leaking".

Field	Value
Notification	10002105
Status	OSNO
Description	Leaking
Functional loc.	C1-B02
Equipment	P-3000-N003
Code group	PUMP/100
Object part	1000
Damage	Leaking
Classification	SAFETYSYSTEM
Description	Safety Sytems
Spurious Trip	No

None standard value being captured



Classification System

What is the classification system?

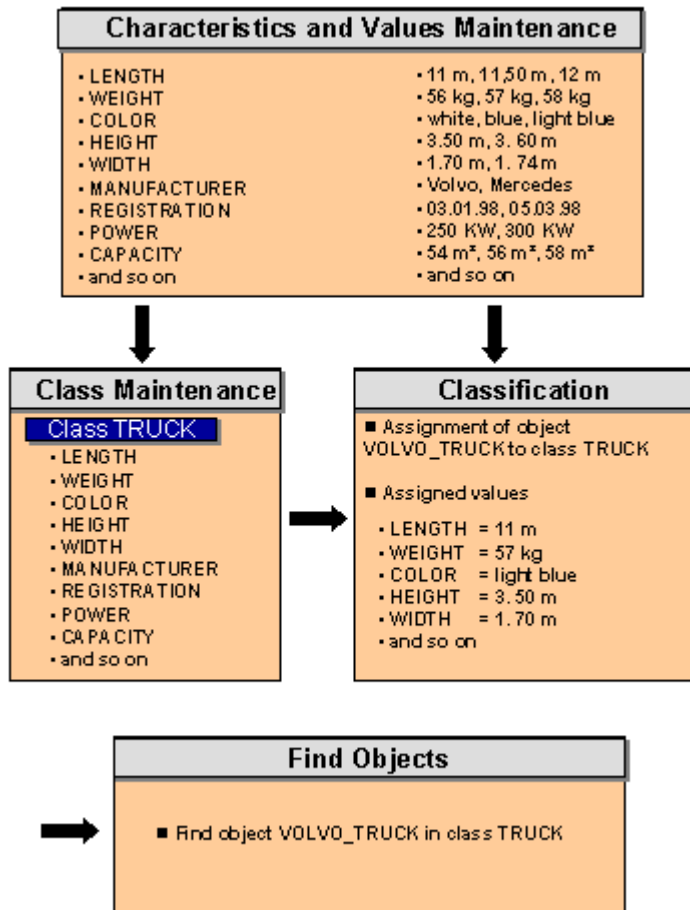
General Purpose:

The classification system allows you to use **characteristics to describe** all types of objects, and to **group similar objects in classes** – to classify objects, in other words, so that you can **find** them more easily later.

Used throughout the SAP ECC suite:

- Variant Configuration
- EH&S Properties Tree
- Batch Management
- CO Orders
- Notifications
- Master data
- PPPI Material Calculations
- Global Batch Traceability
- ...

Classification



Characteristics (CT04)

Create Characteristic

Characteristic: SAFETY_SYSTEM001

Change Number:

Valid From: 01/13/2014

Validity

Basic data | Descriptions | Values | Addnl data | Restrictions

Basic data

Description:

Chars Group:

Status: Released

Auth.Group:

Format

Data Type:

- Character Format
- Currency Format
- Date Format
- Numeric Format
- Time Format
- DPCX_RAM
- Fuel consumption
- UNLOADINGPOINT

Value assignment

Single-value

Multiple Values

Restrictable

Entry required

Date Type: Character, Currency, Date, Numeric, Time, or user defined (class type 31)

Value Assignment: required, only one value, multiple values, restricted to a range or list:

Characteristics

Choosing the format will result in additional formatting options

Note: for character based watch for case sensitivity

Create Characteristic

Characteristic: SAFETY_SYSTEM001
Change Number:
Valid From: 01/13/2014

Basic data | Descriptions | Values | Addnl data | Restrictions

Basic data
Description: Type of Incident
Chars Group:
Status: Released
Auth.Group:
Format
Data Type: Character Format
Number of Chars:
Case Sensitive:
Template:
Value Assignment
Single Value (selected)
Multiple Values
Restrictable
Entry Required

Characteristic: SAFETY_SYSTEM001
Change Number:
Valid From: 01/13/2014

Basic data | Descriptions | Values | Addnl data | Restrictions

Basic data
Description: Type of Incident
Chars Group:
Status: Released
Auth.Group:
Format
Data Type: Numeric Format
Number of Chars: 2
Decimal Places:
Unit of Measure:
Template:
Exp. display: No exponent
Value assignment
Single-value (selected)
Multiple Values
Interval vals allowed
Negative Vals Allowed
Restrictable
Entry Required

Template for data entry

Characteristics

Create Characteristic

Characteristic: SAFETY_SYSTEM001
Change Number:
Valid From: 01/13/2014 Validity

Basic data | Descriptions | **Values** | Addnl data | Restrictions

Additional Values Other Value Check

Char. Value	Description	D	O	S
A	Non Critical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	Critical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Entry 1 of 2

Create Characteristic

Characteristic: SAFETY_SYSTEM001
Change Number:
Valid From: 01/13/2014 Validity

Basic data | Descriptions | **Values** | Addnl data | Restrictions

Additional Values Other Value Check

Selected Set

Plant

Selected Set

Value Check Strategy

Allowed values

Check Table

Funct. module

Catalog char.

Value checks: reference to a list of values, a check table, function module, or a catalog (selected sets)

Characteristics

Create Characteristic

Characteristic: SAFETY_SYSTEM001

Change Number: []

Valid From: 01/13/2014 [Validity]

Basic data | Descriptions | Values | **Additional data** | Restrictions

Reference to Table Field

Table Name: [] Field Name: []

Document

Document: []

Document Type: []

Document Part: []

Doc. Version: []

Procedure for Value Assignment

Not Ready for Input

No Display

Display Allowed Values

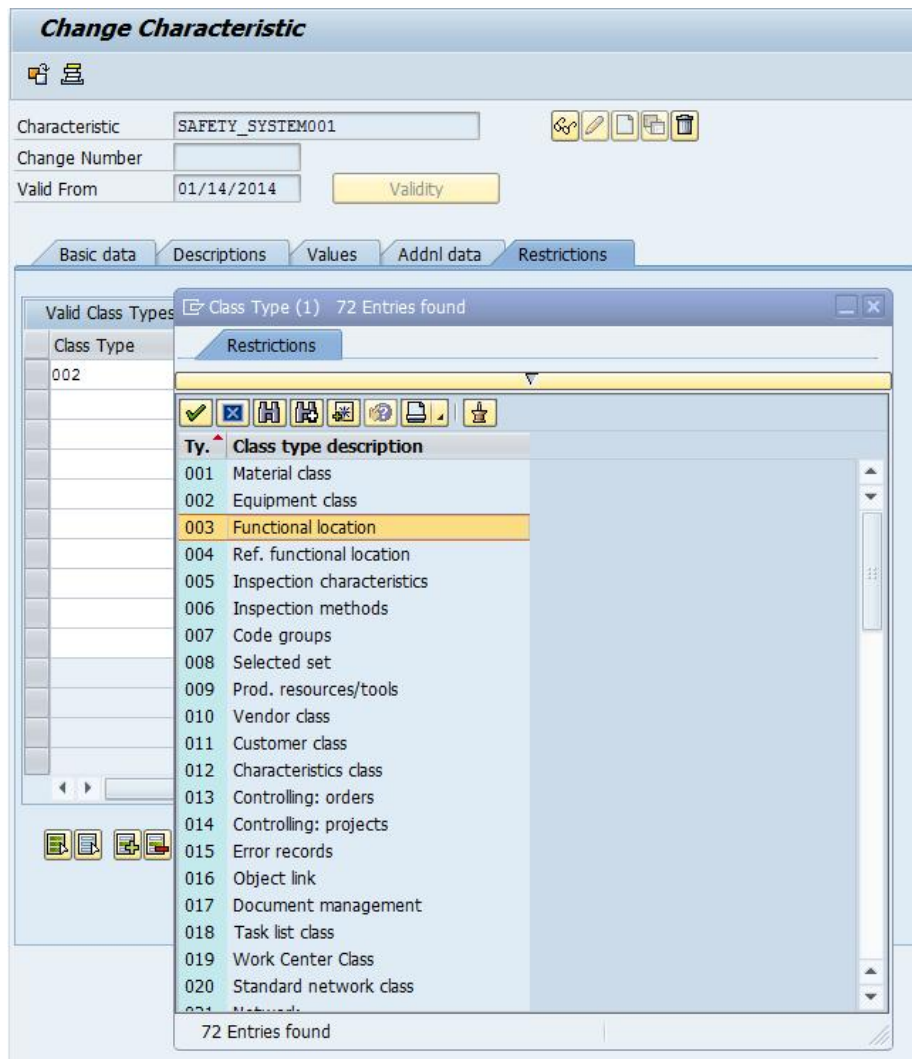
User Entry Handling

Unformatted Entry

Additional Data: reference a table / field (automatically take the field value)

Value Assignment: not ready for input: used when the value is inferred by other means e.g. object dependencies.

Characteristics



Restrict the characteristic use to only allowed class types

Classes (CL02)

The screenshot displays the SAP Class Type (CL02) configuration screen. The main window is titled "Class" and includes a "Change Language" button. Below this, there are input fields for "Class", "Class type" (with a checked checkbox), "Change Number", and "Valid from" (set to 01/13/2014). A "Validity" button is also present. The "Basic Data" tab is active, and a pop-up window titled "Class Type (2) 72 Entries found" is overlaid on the screen. This pop-up window shows a list of class types with the following columns: "Ty." and "Class type description".

Ty.	Class type description
001	Material class
002	Equipment class
003	Functional location
004	Ref. functional location
005	Inspection characteristics
006	Inspection methods
007	Code groups
008	Selected set
009	Prod. resources/tools
010	Vendor class
011	Customer class
012	Characteristics class
013	Controlling: orders
014	Controlling: projects
015	Error records
016	Object link
017	Document management
018	Task list class
019	Work Center Class
020	Standard network class
021	Networks

The pop-up window also shows a toolbar with various icons and a status bar at the bottom indicating "72 Entries found".

Classes

Change Class:

Change Language

Class: SAFETY_SYSTEMS

Class type: 002 Equipment class

Change Number:

Valid from: 01/14/2014

Validity

Basic Data | Keywords | Char. | Texts

Basic data

Description: Safety Systems

Status: Released

Class group:

Organizational area:

Valid From: 01/13/2014

Valid To: 12/31/9999

Local class

Same classification

Do not check

Warning message

Check with error

Authorizations

Class maintenance:

Classification:

Find object:

Administrative data

Assignments

Created by: I001976

Created on: 01/13/2014

Changed by: CONSULTANT

Changed on: 01/14/2014

Check for objects classified the same
More important for materials than equipment

Classes

Create Class:

Change Language

Class: SAFETY_SYSTEMS

Class type: 002 Equipment class

Change Number:

Valid from: 01/13/2014

Validity

Basic Data Keywords Char. Text

Char. Description

Char. Name	Description	Valid From	Group	Form
C_CABLE_TYPE	Type of Cable	00/00/0000	PC_NETWORK CHAR	
C_LAN_TYPE	Type of LAN	00/00/0000	PC_NETWORK CHAR	
C_MOTHERBOARD	Type of motherboard (main)	00/00/0000	PC_NETWORK CHAR	
C_OPERATING_SYSTEM	Operating system	00/00/0000	PC_NETWORK CHAR	
C001	Pump lift	00/00/0000		
C002	Pump capacity	00/00/0000		
C003	Turning speed	00/00/0000		
C004	Material	00/00/0000		
C005	Usage	00/00/0000		
C010	Contents of active ingredients	00/00/0000		
C020	Viscosity	00/00/0000		
C030	Range of cover	00/00/0000		
C040	Solvent proportion	00/00/0000		
C050	Grain size (.m)	00/00/0000		
C060	Color strength	00/00/0000		
C070	Color purity	00/00/0000		
C080	Porosity	00/00/0000		
C090	Density	00/00/0000		
C100	Solubility	00/00/0000		
C110	Boiling point	00/00/0000		
C200	Running wheel diameter	00/00/0000		
C201	Pump capacity	00/00/0000		
C202	Equipment type	00/00/0000		
C203	Manufacturer	00/00/0000		
C204	Construction date	00/00/0000		
C205	Serial number	00/00/0000		
C206	Serial Number	00/00/0000		
C208	Activity	00/00/0000		
CABIN_DEPTH	Cabin depth	00/00/0000	ELEVAT	
CABIN_DESCRIPTION	Cabin description	00/00/0000	ELEVAT	
CABIN_FITTINGS	Cabin fittings	00/00/0000	ELEVAT	
CABIN_FLOOR	Cabin floor	00/00/0000	ELEVAT	
CABIN_HEIGHT	Cabin height	00/00/0000	ELEVAT	

More than 500 input options

Assign Characteristics to class.

Note: One reason to restrict characteristics is to reduce search results

Class: SAFETY_SYSTEMS

Class type: 002 Equipment class

Change Number:

Valid from: 01/13/2014

Validity

Basic Data Keywords Char. Texts

Char.	Description	Dat...	N...	D...	Unit	R...	Org. Areas	Std ...	O...	I...	Origin	P...	S...
C001	Pump lift	NUM	10	0	m								
C002	Pump capacity	NUM	10	0	m3								
C003	Turning speed	NUM	8	0									

Entry 1 of 3

Assignment (CL20N, CL24N, CL22N)

The screenshot displays three SAP windows related to class assignments:

- Assign Object to Classes:** Shows the selection of Equipment (10006346) and Class Type (002). The Assignments table lists SAFETY_SYSTEMS as the Class and Safety System as the Description.
- Assign Objects/Classes to Class:** Shows the selection of Class (SAFETY_SYSTEMS) and Class Type (002). The Assignments table lists the object 10006346 with the description 'Ultra Slimline T-Series Safety Valve'.
- Assign Class to Superior Classes:** Shows a list of 86 entries for Class SAFETY_SYSTEMS. The list includes keywords such as AERIAL, AIR PUMPS, CAR, CIRCUIT BREAKER CLASSIFICATION, and EQUIPMENT, with columns for Language (EN), Type (002), and Class (A, ED111, ED122, etc.).

At the bottom, the 'Values for Class SAFETY_SYSTEMS - Object 10006346' window is partially visible, showing a table with columns for Characteristic Description and Value.



EAM Master Data

Equipment: Class assigned within Equipment (IE01, IE02)

Change Equipment : Classification

Object
Equipment: 10006346
Class Type: 002

Change Equipment : Classification

Object
Equipment: 10006346 Ultra Slimline T-Series Safety Valve
Class Type: 002 Equipment class

Assignments

Class	Description	St...
SAFETY_SYSTEMS	Safety Ssystems	<input type="checkbox"/>

Entry: 1 / 1

Values for Class SAFETY_SYSTEMS - Object 10006346

General

Characteristic Description	Value
Pump lift	
Pump capacity	
Turning speed	

Change Equipment : Classification

Object
Equipment: 10006346 Ultra Slimline T-Series Safety Valve
Class Type: 002 Equipment class

Assignments

Class	Description	St...	S.. I...	Itm
SAFETY_SYSTEMS	Safety Ssystems	<input type="checkbox"/>	1	10

Entry: 1 / 1

Values for Class SAFETY_SYSTEMS - Object 10006346

General

Characteristic Description	Value
Pump lift	
Pump capacity	
Turning speed	

Pump lift

F.. Characteristic Value

D	Doc.	Doc	Ob...	Expl	Inco
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					

Value entry

Functional Location: Class assigned within FLOC (IL01, IL02)

Change Functional Location: Classification

Object

Functional loc. C1
Description Clarification plant
Class Type 003 Functional location

Assignments

Class	Description	St...	S.. I...	Itm
UT_TECH_DATA	Technical Data	<input type="checkbox"/>	1	20

Entry 1 / 1

Values for Class UT_TECH_DATA - Object C1

General

Characteristic Description	Value
Station Black-out	
Maintenance rule	
Lubrication Program	
In-service Inspection	
PID Tag	

Inconsistent

Measurement Points

Maintain Measuring Points: Overview

Maintenance plans Measurement documents Last measurement document... New entries

Equipment 10006346
Description Ultra Slimline T-Series Safety Valve

Measuring points

MeasPoint	Measurement position	Cat	Char. Name	Unit
<input type="checkbox"/> 11753		M	DURCHFLUSS	l

Counter

Class Characteristic
used if measurement
point is a counter

Catalog Profile

Display Class:

Change Language

Class: SAFETY_SYSTEMS

Class type: 015 Error records

Change Number:

Valid from: 01/14/2014

Validity

Basic Data | Keywords | Char. | Texts

Char.	Description	Dat...	N...	D...	Unit	R..	Org. Areas	Std ...	O. I...	Origin	P.. S..
SAFETY_SYSTEM002	Unious Trip	CHAR	1	0							

Change Equipment : Organization

Class overview Measuring points/counters

Equipment: P-3000-N003 Category: Machines

Description: Electric pump 003

Status: INST 0001

Valid From: 04/22/1999 Valid To: 12/31/9999

General | Location | Organization | Structure | Class and Docs

Account assignment

Company Code: 3000 IDES US INC New York

Business Area: 9900 Corporate Other

Asset: /

Cost Center: 4110 / 2000 Technical Facilities

WBS Element: /

StandgOrder: /

SettlementOrder: /

Responsibilities

Planning plant: 3000 New York

Planner group: 100 Mr. Trintz 610-595-2112

Main WorkCtr: MECHMNT / 3000 Mechanical maintenance

Catalog profile: SAFE Safety Systems

Change View "Catalog profiles": Details

New Entries

Dialog Structure

- Catalog profiles
 - Catalogs / code grou

Catalog profile: SAFE Safety Systems

MessageTyp_during_insp.

Notification item

Classification: SAFETY_SYSTEMS Safety System

Class. system screen

Notification: Failure Reporting (Using Classification) By Item

Classification:

- Allows for additional information to be collected on the Notification for each item

Note: Associated with catalog profile

Note: Use to capture the consequence severity from ISO 14224 table C 1

The screenshot displays the SAP PM Notification: Malfunction report interface. The main window shows the notification details for notification 10002105, status OSNO, and subject Leaking. The reference object is C1-B02, and the equipment is P-3000-N003. The malfunction data shows a start time of 10/09/2013 08:31:47. The item details are shown in a separate window, which is circled in red. The item details window shows the following information:

Field	Value
Sort number	1
Item	1
Text	
Object part	
Code group	PUMP/100 Pump assemblies
Object part	1000 Case
Assembly	
Damage	
Code group	PUMP/100 Pump damage
Damage	1000 Leaking
No. of defects	1
Classification	
Classification	SAFETYSYSTEM
Description	Safety Systems
Spurious Trip	No

Example: Getting Data Out of SAP Functional Locations (List Editing: IL05) – using classification to restrict values

The screenshot displays the SAP 'Change Functional Location: Functional Location Selection' and 'Change Functional Location: Functional Location List' screens. The 'Selection' screen shows various input fields for functional location data, with a red circle highlighting the 'Class Type' field set to '003' and the 'Class' field set to 'UT_PLANT_DATA'. The 'List' screen shows a table of functional locations with columns for selection status, functional location ID, description, and PIP1 value.

Selection	Functional location	Description of functional location	PIP1
S	BNSF-CENTRAL	BNSF Central Region	3000
	BNSF-CENTRAL -LC	BNSF Central Region - Locomotive	3000
	BNSF-CENTRAL -OT	BNSF Central Region - Other	3000
	BNSF-CENTRAL -TR	BNSF Central Region Track	3000

Similarly for Equipment (IE05)



Questions?



Thank you

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