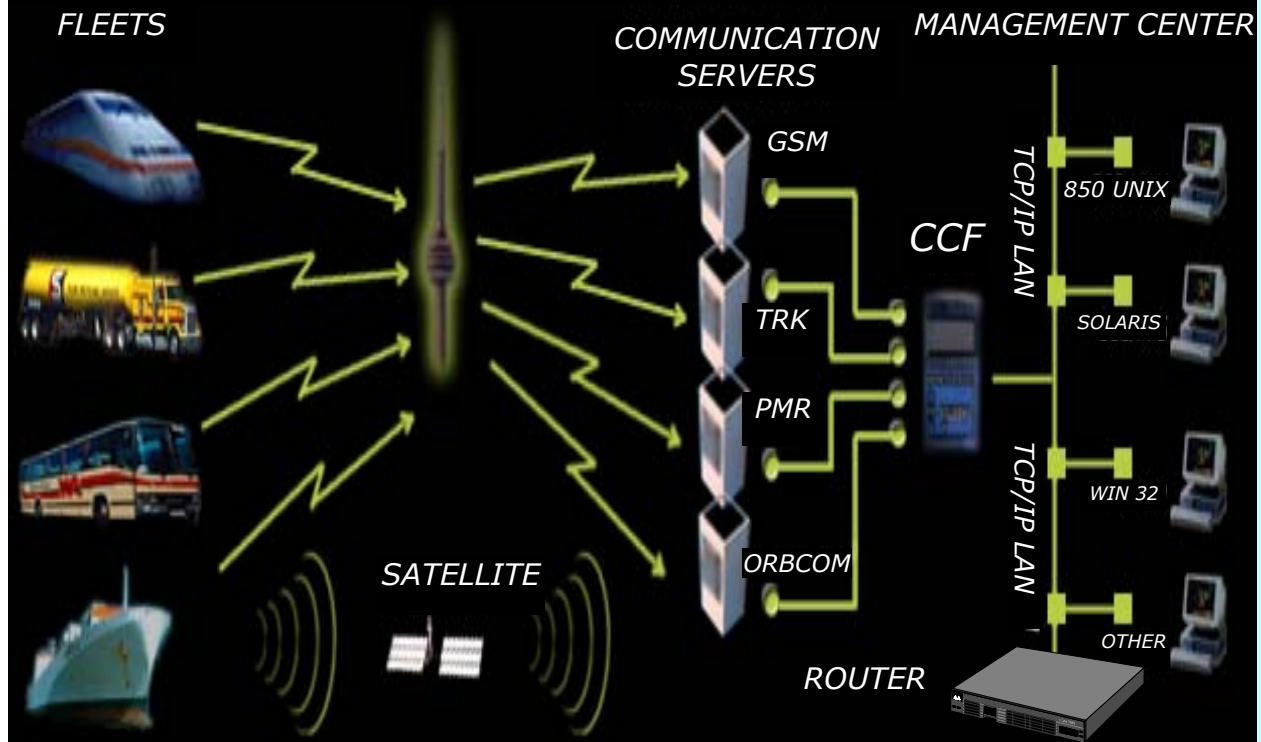


FLEET CONTROL CENTER



CCF

The Fleet Control Center (CCF) is an specific software, designed and created by SENA GPS, for maintaining communications between a fleet of mobiles equipped with different communication means and systems and a Fleet Management Center (CGF) in charge of manipulating the data of the vehicle fleet.

A Fleet Control Centre has the following features:

- Transparent management of different communication systems (GSM, TRUNKING, ORBCOMM, PMR), by using dedicated Communications Servers, installed to serve the communications ports.

- Simultaneous control of up to 15 communication ports, with the same or different types of Communications Servers (e.g.: 2 GSM Servers and 3 Trunking Servers).

- It communicates with management applications over a

TCP/IP network by means of sockets and with an self-descriptive frame protocol. Communication can also be maintained using an Active X control embedded in the actual application. This enables the use of an architecture distributed among different machines.

- Ability to maintain multiple connections with different applications. It can receive commands from different applications and, every time it receives information from a vehicle in the fleet, it passes it on to all the applications currently connected to it.

- It allows for the definition of different sub-fleets with access being restricted through the user / password identification.

- Possibility to make reverse differential GPS corrections. All these combined features allow for a higher precision in the position of the vehicles, without the need for transmitting the correction parameters.

SERVERS

Various devices such as GSM, Trunking, PMR, Orbcomm and others are controlled by an unified specification for communications management.

SENA GPS has a set of drivers for the most common devices, while offering the client the possibility of implementing new means of communication.

In applications with a high traffic of messages, the CCF allows for the creation of as many simultaneous data servers as the client may wish, whether with one communications operator or with several ones.

DATA SUPPLY

The CCF supplies data to user applications by means of "Berkeley sockets" so that clients can work on operating systems as varied as BSD Unix, Solaris or WIN32.

Furthermore it allows connecting to as many user applications as are required, with a configurable privilege management system of operations on the fleet.

PROTOCOL

A development kit, with sample applications supplied with their source code, is available to enable the users to develop their own applications.

The data protocol between the CCF and other applications is self-descriptive. This means that, if the data supplied by the CCF is not implemented in the CGF, the latter may disregard them, without hindering the performance of the application in any way.

Since the CCF controls different communications devices, it can act as a transparent means of transmission for the user application data.

SERVER INFORMATION

Communications Port Status
Server ID
Server Name
Server Instance
Communications Port
Server Means of Communication
Server Id Error

CONFIGURATION DATA

Date and Time
Destination Telephone
Destination User Data
Originating Telephone
Originating User Data
Error
Destination Telephone Error
Destination User Data Error
Synchronisation Request
Destination String
Destination String Error
Privilege Mapping Error
CCF With fleet control
CCF Properties List
Vehicle Properties List
Server Properties List
Generated Frames Set
Frame Progress Notification
Use of Differential Corrections

VEHICLE DATA

Vehicle Identifier and Name
Mobile Telephone Number
Means of Communication with the Vehicle
Position, speed and course data
GPS Time
Satellites in View and Navigator Mode
Analog and digital signals
Auto-response Time
Auto-response Duration
Activity Time
Sleep Time
Pool Response Type
identifier, Telephone and Centre Means 1 to 6
Errors
Reason for Submission
PDOP
Navigator Status
Software Version
Data Submission Mode
Transmission Bits
Server Id
Number of Saved Records
Time Between Saves
Saving Configuration
Record Size
No. of Free Records
No. of Downloaded Records
Movement Sensor
Save Order
Message Code
Message
Date and Time of Last Message

