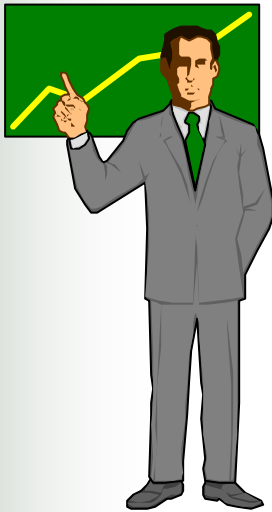




ADVANTAGES

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- ✓ Entertainment for passengers and support for other media advertising.
- ✓ High image quality. Attractive for the viewer.
- ✓ Unlimited number of screens per car.
- ✓ Flat screens allow fully integrated installation in all types of vehicles.
- ✓ Remote surveillance on all the fleet.
- ✓ Protection against vandalism.
- ✓ Free of charge service for passengers.



AGENTS. CONTRIBUTION

TRANSPORT OPERATOR

- ✓ INFRASTRUCTURE.
- ✓ PASSENGERS.



IKUSI

- ✓ EQUIPMENT AND SOFTWARE.
- ✓ INSTALLATION.
- ✓ MAINTENANCE.



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COMMUNICATIONS OPERATOR

- ✓ CONNECTIONS FROM THE OPERATION CENTER TO THE CARS.

CONTENT OPERATOR

- ✓ ADVERTISING CONTRACTS.
- ✓ CREATION OF DISPLAY MATERIAL.
- ✓ DISTRIBUTION OF MATERIAL.





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Ford

The most important project

LIVE TV



KUSI

OPERATION

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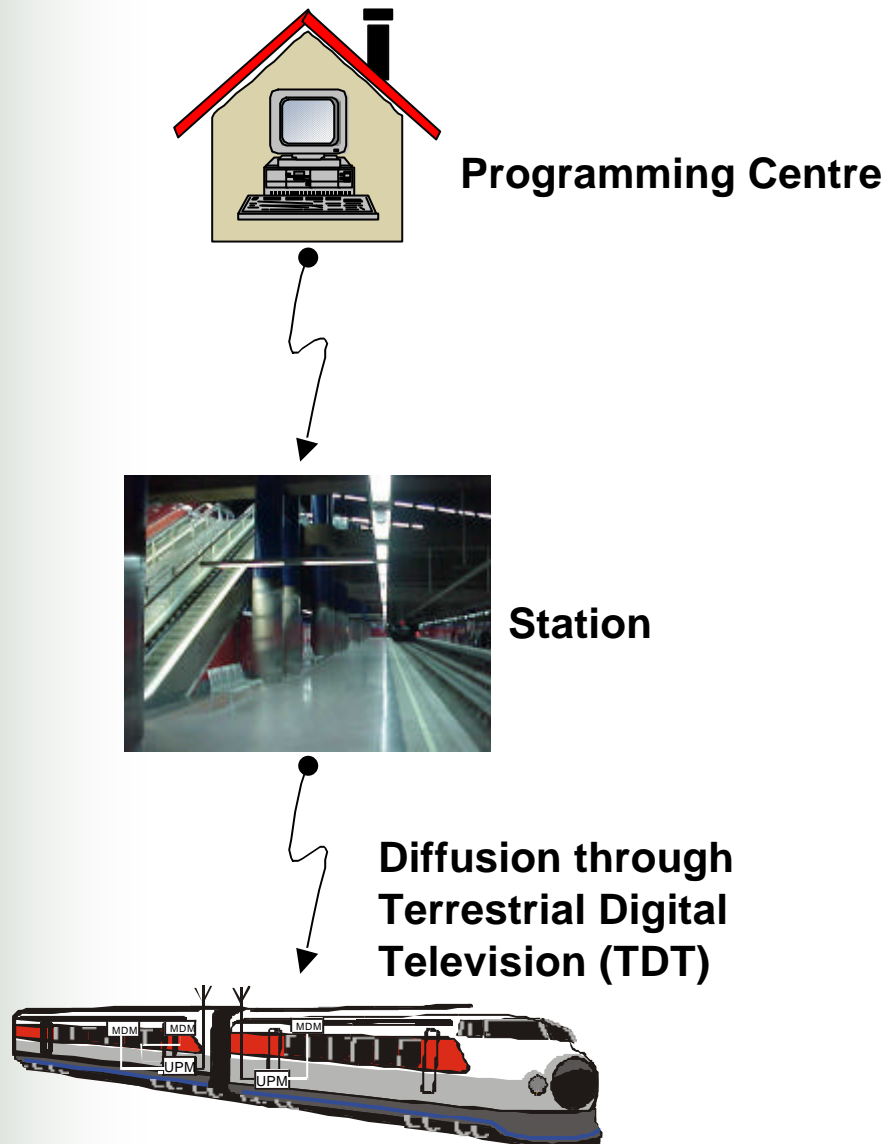
✓ GROUND BASED

✓ ON BOARD



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SYSTEM LAYOUT



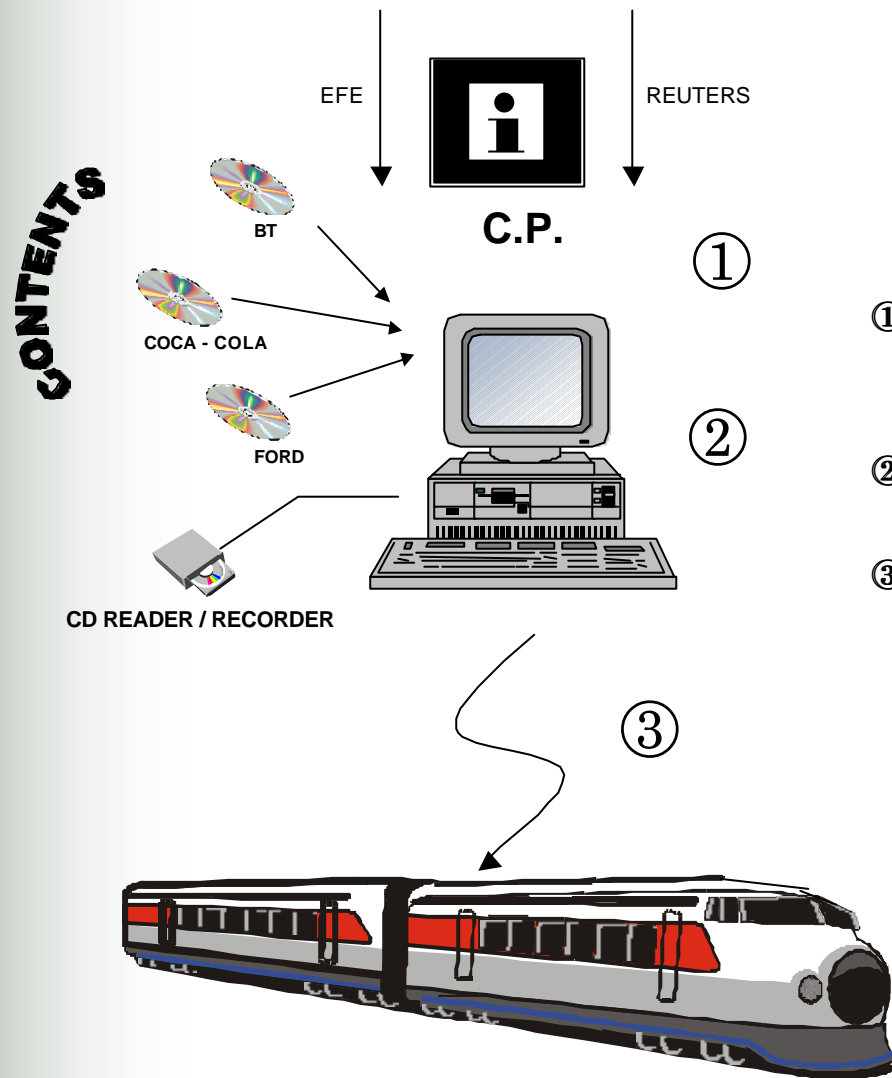
REQUIREMENTS

- ✓ Infrastructure needed for the system:
 - Programming Centre --> Stations.
 - Between stations.

- ✓ Coverage in tunnels and on the surface.



OPERATION: PROGRAMMING AND DIFFUSION



- ① Contents received by the advertising agent (producer).
- ② Programme creation.
- ③ Diffusion of the programme through the Terrestrial Digital Television (TDT).



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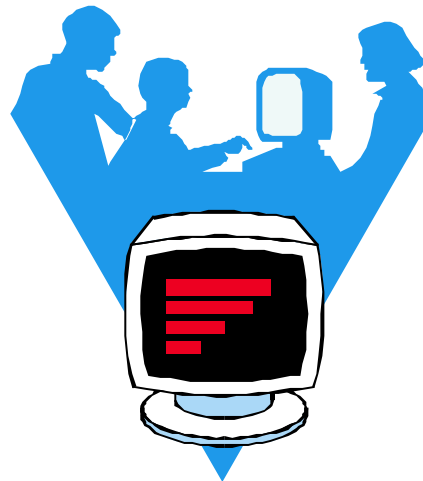
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OPERATION: PROGRAMME DIFFUSION

- ✓ **The Control and Programming Centre sends the programme, in video format, by Coaxial Cable, Optical Fibre, Radio or Satellite to a certain Distribution Point, generally placed in a certain End Station.**
- ✓ **In this Distribution Point the programme is converted to a Terrestrial Digital Television (TDT) signal and sent by Optical Fibre or similar to all stations in the network.**
- ✓ **Each station receives the programme and sends it again along the tunnels.**
- ✓ **The programme is received in each train and sent to all monitors by coaxial cable.**





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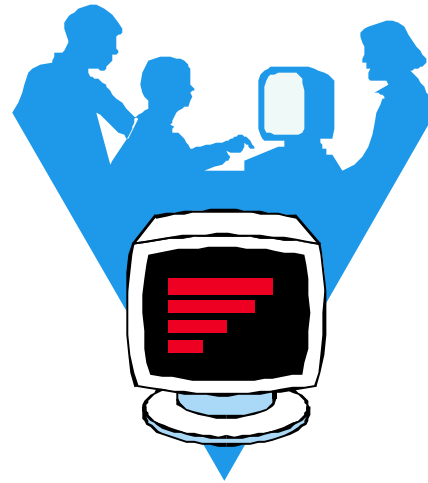
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OPERATION: SURVEILLANCE

✓ Local, in the head end of the train.

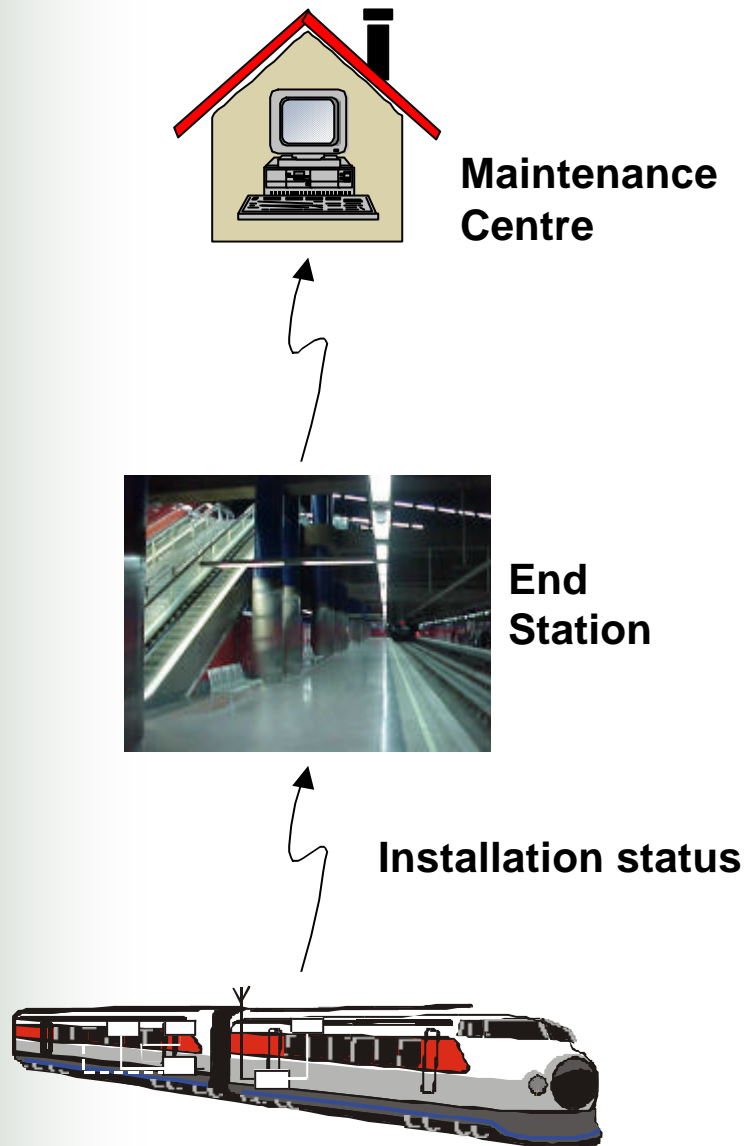
✓ Remote, the head end of the train sends the status to the Maintenance Centre.





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OPERATION: SURVEILLANCE



- ✓ From the train some messages are sent to the server installed in the End Station of each line. This equipment sends all the information from this line to the Maintenance Centre.
- ✓ These messages give information about the status of the Head End and every individual monitor during the service.



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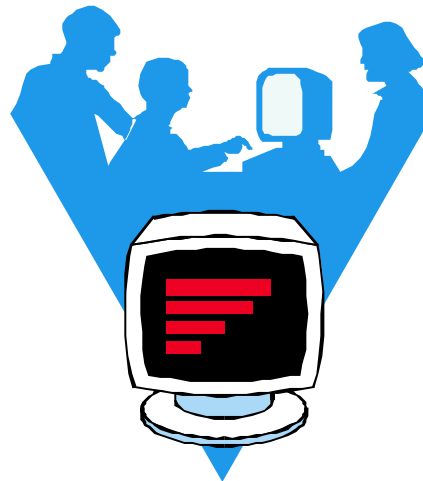
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OPERATION: SURVEILLANCE

- ✓ Each monitor give information about its status to the Head End installed in each Unit.
- ✓ The Head End supplies further information about its own status.
- ✓ When the train arrives at the chosen End Station, the Head End sends the information to the server installed in this End Station.
- ✓ The server installed in each End Station sends the whole information (received from all trains on this line) to the Maintenance Centre.
- ✓ The Maintenance Centre makes a report with the status, failures and carries out the repairing and maintenance plan.





ADVANTAGES

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- ✓ The system works as a conventional TV channel.
- ✓ Entertainment for passengers and support for other media advertising.
- ✓ High image quality. Attractive for the viewer.
- ✓ Versatility in displaying the information instantaneously, in real time.
- ✓ Unlimited number of screens per car.
- ✓ Flat screens allow fully integrated installation in all types of vehicles.
- ✓ Remote surveillance on all the fleet.
- ✓ Protection against vandalism.
- ✓ Free of charge service for passengers.



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AGENTS. CONTRIBUTION

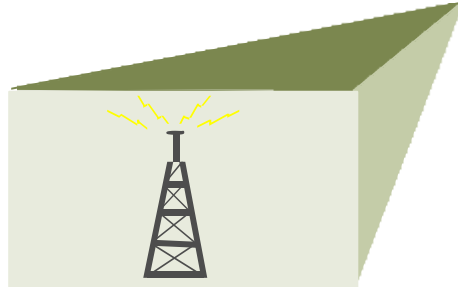
TRANSPORT OPERATOR

- ✓ INFRASTRUCTURE.
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INSTALLATION (MADRID UNDERGROUND)





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INSTALLATION (BILBAO UNDERGROUND)





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INSTALLATION (HONG KONG UNDERGROUND)

