PEAS For Automatic Traffic Signal

Agent: An agent is anything that can be viewed as:perceiving its environment through sensors and acting upon that environment through actuators

Intelligent agents

- The concept of intelligent agent is central in AI.
- AI aims to design intelligent agents that are useful, reactive, autonomous and even social and pro-active.
- An agent perceives its environment through percept and acts through actuators.
- A performance measure evaluates the behavior of the agent.
- An agent that acts to maximize its expected performance mea□sure is called a rational agent
- PEAS: A task environment specification that includes Perfor□mance measure, Environment, Actuators and Sensors.
- Agent = Architecture + Program

PEAS OF Racing Car

- **Performance:** Destination, time, Safety, Legality.
- **Environment:** Roads, other cars, weather, road signs
- **Actuators:** Display
- **Sensors :** Camera, sensor, GPS,

Partially ovserbale, Single Agents, Stochastic, Dynamic, Continuous

Rules of Traffic Signal

1. Detectors on minor approaches only.
2. Major phase receives a minimum green interval.
3. The green remains on the main street until a call for service on the side street is registered
4. If the main street has had enough green, the side street is given the green for just enough time to guarantee that its vehicles are processed.
5. Usually Point Detectors are used.
6. Detectors can be placed at either stop line or upstream location.

Advantages

- It can be used effectively in a coordinated signal system. •
- Relative to pre-timed control, it reduces the delay incurred by the major-road through movements during periods of light traffic.
- It does not require detectors for the major-road through movement phases and hence, its operation is not compromised by the failure of these detectors.
- Generally, the main street indeed has the green whenever possible.

Disadvantages

1. Continuous demand on the phases associated with one or more minor movements can cause excessive delay to the major road through movements if the maximum green and passage time parameters are not appropriately set.
2. Detectors must be used on the minor approaches, thus requiring installation and ongoing maintenance.
3. It also requires more training than that needed for pre-timed control