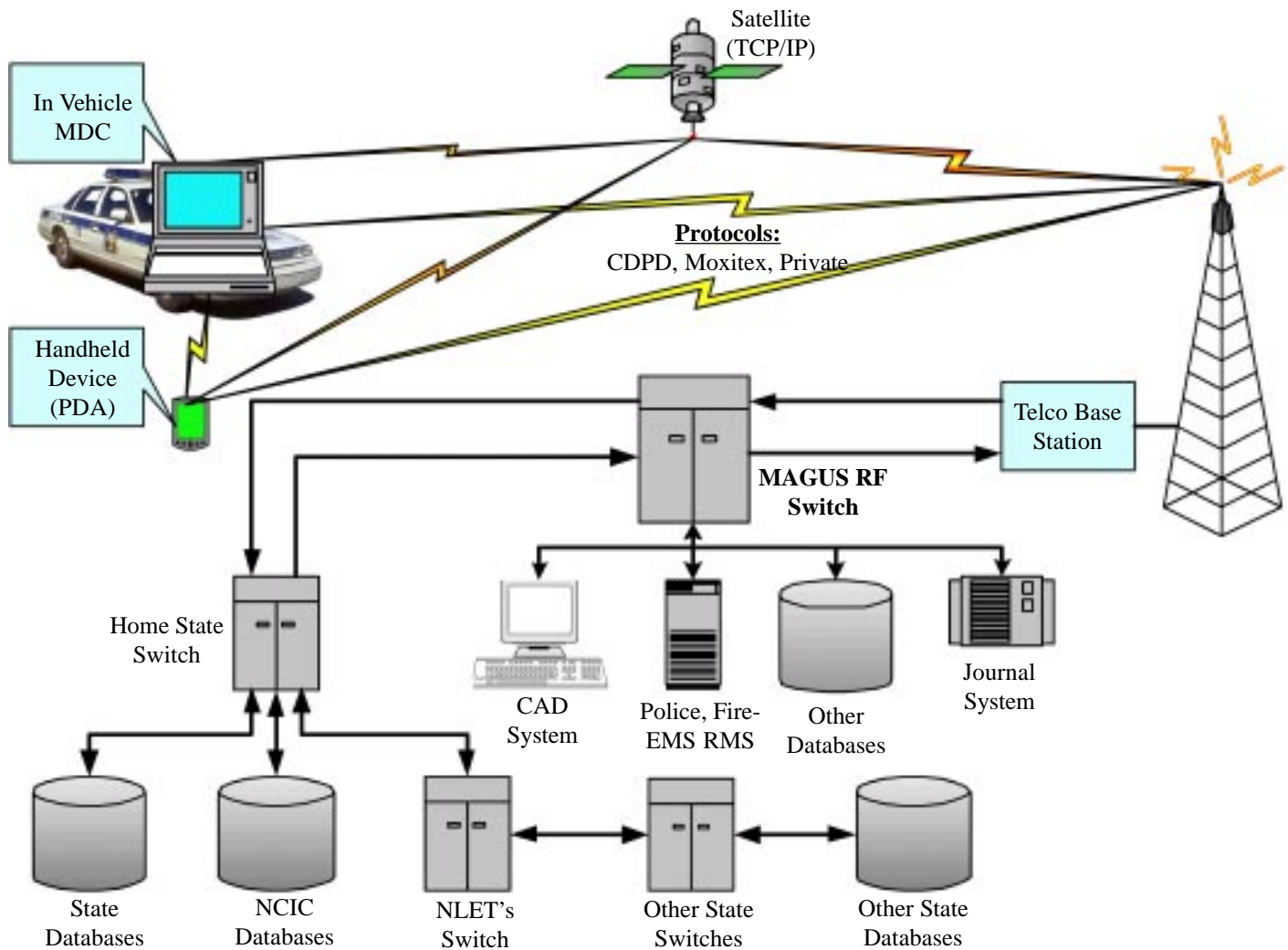


MAGUS RF

Wireless Network Management



Wireless network management is one of our **MAGUS™** switches' adjunctive features. We style the facility "**MAGUS RF**," the RF referencing radio frequency. Radio Frequency carries packets of digital data between **MAGUS RF** servers and their client mobile data computers (MDC's). Currently, our **MAGUS RF** switches control about three thousand MDC's.

To mediate the exchange of data between, for example, your CAD system and your MDC's, (say, laptops) **MAGUS RF** switches use any of three commercially supported protocols: CDPD (Cellular Digital Packet Data) and Mobitex. If your area hasn't coverage for either of these widely available protocols, we can provide others.

In saying these three digital data protocols are "commercially supported," we mean that a local wireless carrier owns and operates the radio frequency elements of the network (i.e., the transmitter and base station). Carriers provide these facilities as fee-bearing service.

Often, effective price competition between the Protocols' local carriers prompt economic wireless benefits. Typically, these carriers offer both flat rate periodic tariffs (say, \$45 per month per MDC) and tariffs that vary with use. If you choose to deploy the **MAGUS RF** feature, we will, if you wish, aid you in negotiations with your carrier.

Wireless service can be used variously in public service. It can allow your MDC's to act almost as CAD clients or other workstations within the authority granted each user/terminal combination by your agency's policies.

There is one important difference between MDC's and locally networked workstations. That difference is the speed with which they and their servers can exchange data. Local terminals and their remote servers typically exchange data at theoretical throughput of 10 to 100 million bits (roughly a 1-10 million characters) per second. CDPD and Mobitex's current implementations limit such rates to between 4000 and 19,200 bits per second, or, at their fastest - roughly 400 to 2000 characters per second. In urban settings, the newer protocol, GPRS, accommodates some 384,000 bits per second and in suburban and rural areas, where coverage is available, approximately 128,000 bits per second.

For reasons outside the scope of this brief, actual throughput is less in some metropolitan areas. In any case, it is our job to minimize your particular application's response times. Doing so requires we understand well both its dynamic and your area's RF environment.

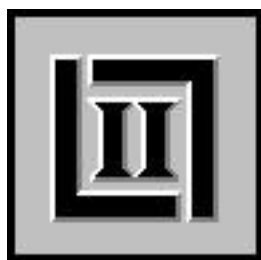
As we said above, wireless can serve several needs. Dispatchers can inform field units they've been assigned to an incident, with that incident's type, location and other immediately germane

details. Any emergency vehicle, Police, Fire, or EMS, can periodically update their status (e.g., in route, arrived on scene, request for backup, etc.). Field reports can be composed on MDC's and submitted. As authorized, field staff can pose queries of a number of public safety databases (e.g., wants and warrants, criminal history, vehicle data, license data, etc.).

MAGUS also, adjunctively, enables field staff to carry both MDC's and smaller, hand-held devices, sometimes called Personal Digital Assistants (PDA's). PDA's can be linked either to their accompanying MDC's via Wireless Ethernet (IEEE 802.11b,) or directly to the **MAGUS** switch via RF.

We show both methods in the diagram. PDA's linked directly to their MDC's enjoy RF connection to **MAGUS** via the MDC's channel. This saves the extra tariff for a carrier-mediated PDA/**MAGUS** channel. Because of the high speed of the PDA/MDC link (IEEE 802.11b), the perceptible difference in response time is nil.

LEVEL II's **MAGUS** switches provide as broad a range of services and as fine performance as is available at any cost. Still, they offer the least costly combination of RF support and a *full service* public safety switch in the market. We urge you to discuss both your switching and RF network needs with us.



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