Direct Data Connection to remote devices over IP data network

Many remote devices such as data logger or utility meters have the ability to store information and communicate with a central data management system that performs data collection, configuration and diagnostic functions.

The most common mean of communication for these devices is circuit-switched telephony data call. This is sufficient and practical for environment where traditional telephony service is readily available. However, when these devices are installed in far-flung remote locations, then communication then become challenging and in many cases, very expensive.

Furthermore, most circuit-switched based network infrastructure are being phased out and replaced with IP based network, these installation will be rendered obsolete unless a complete system redesign. This system redesign effort involves modification of central data management system software as well as replacement of all the installed remote devices that are IP capable.

On-Go has developed a solution that allows the existing infrastructure to remain the same while providing all the benefit of packet based IP communication backbone. On-Go's approach offers tremendous cost benefit to those customers with large remote equipment install base.

1. The equipment does not have to be changed
2. The central data management system do not have to be changed
3. Communication mean is the same
4. Cost saving in the recurring communication cost

In addition, On-Go solution is much easier to manage than IP based solution for remote data connectivity:

1. Most remote terminals have dynamically-assigned IP addresses, that means it is difficult for central management system to keep track of the terminal address. Either special STATIC IP addresses have to be allocated for the remote terminal or dynamic name resolution has to be used.

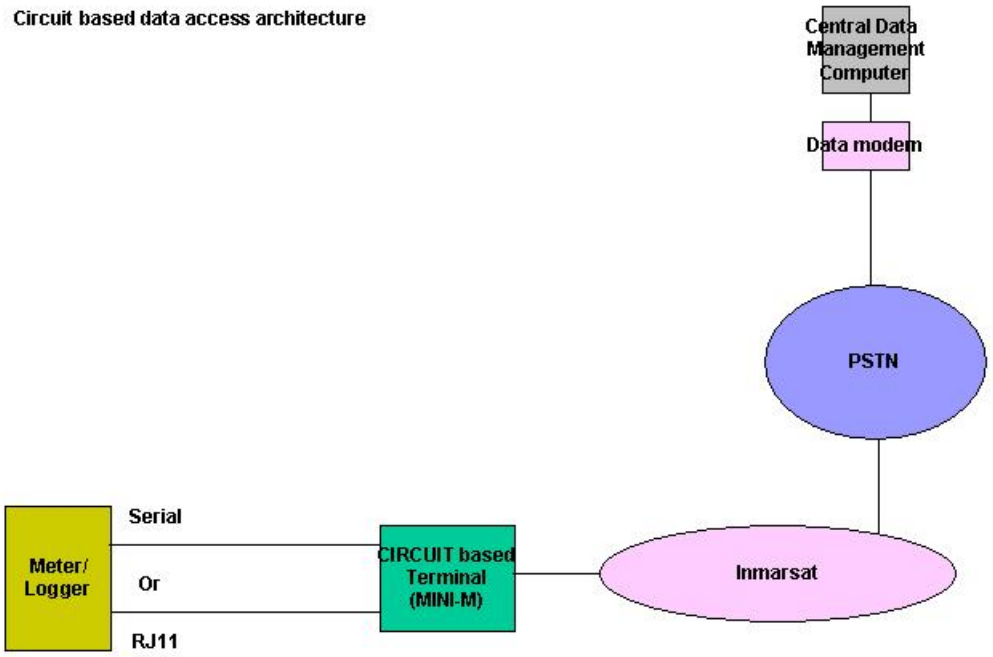
   With On-Go solution, it is a simple plug-and-play hook up without messing with the IP address or name server.

2. If multiple data devices are connected to the same network terminal, then different IP port has to be assigned since all data devices attached to the same network terminal would appeared to have the same IP address, so the only way to differentiate them is the use of IP port number. This adds more complexity to the central management software to track not only the address but the port number.

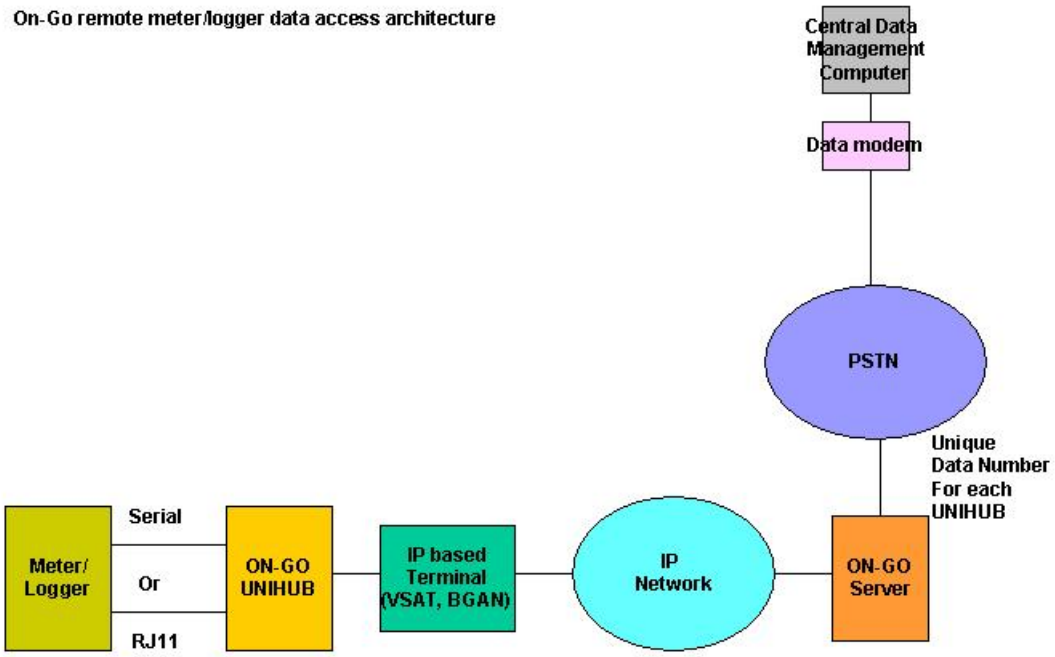
   Again, with On-Go solution, each device has its own specific data phone number. You can connect as many data devices as needed to the same network terminal without having to worry about the IP port number.

The following diagram depicts the traditional circuit based connection method. In this scenario, the Central Data Management Computer calls the Inmarsat Mini-M (87x) or Iridium (8816) phone number to gain access to the meter/data logger.

The disadvantage is the limited data speed and potential data corruption. Furthermore, the cost is based on connection time (including the modem training time).



The following diagram depicts the On-Go approach with IP based network. The central data management computer now dials up the On-Go server. Each ON-GO UNIHUB has a unique phone number. By calling the unique phone number, the system will mapped it to the specific device and create the end-to-end connectivity. The benefit is that the data rate can be higher, and the cost is based on number of bytes being sent over IP network, not the connection time, so the data access is more economical.



In summary, On-Go Direct Data Connection architecture provides an easy migration path from circuit based satellite connection to packet based satellite connection without the expensive software/process change at the central data management center as well as delivering cost saving to the data access.

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