REMOTE OPERATIONS WORK FLOW

APPLICATION BACKGROUND

This application note describes a remote work flow system which is used in the field for remote based maintenance trucks to enable centrally based work flow systems to be used by remotely located personnel.

The remote locations are anywhere within a region and the central location is in a head or branch office.

Trucks in the field would be equipped with Inmarsat BGAN Satellite communication systems with roof mounted omni directional satellite antennae to provide internet connectivity, voice connectivity, and WiFi connectivity. In some regions cell phone coverage may be available, and this provides similar functionally.

The trucks in the field would be equipped with rugged tablet computers, for example the ALGIS rugged laptop computer which would be accessing several corporate applications on a central office or central control centre.

Trucks in the field would be equipped with a Neon GPS receiver / Neon remote asset / vehicle tracking system so the location of each truck could be known and displayed at the central location or control centre to at all times to ensure a high level of occupational health and safety for field staff.

The trucks may also have a small printer for printing various documents as and when required.

APPLICATION DETAIL

The GPS co ordinates of each truck would be checked every period, typically each 5 minutes and their location displayed on Google Maps or other LIS systems such as ESRI at the central control room.

These systems could geo reference the truck in the field and bring up alarms if the location was outside safe limits.

A security camera inside the vehicle and / or outside the vehicle would take a low resolution image typically each 5 minutes and that image would be displayed next to the truck icon on Google Maps or other LIS systems such as ESRI at the central control room.

Other vital functions, perhaps temperature, water availability, truck battery volts, fuel level and other parameters could also be monitored and displayed and alarmed if out of limits. A field staff / driver distress button could also be installed in the truck to alert the central location of any dangerous condition.

The rugged tablet computer in the field could access well, pipeline and other infrastructure information documents which are available on document systems within the company's document control system through an appropriate Adobe / PDF interface, providing up to the minute accurate information on all remote infrastructure.

This would eliminate the need to carry updated reference manuals and would ensure any updated manual would be immediately available for field staff use, and they would be accessing only the latest manuals / instructions.

The rugged tablet computer in the field would also access a work flow / scheduling system for jobs to be completed in he field, and associated Health and Safety plans.

The staff in the field could access the work flow system indicating job progress and completion through the rugged tablet computer in the field. The staff in the field could also take high resolution images and some video to indicate the operational status of various infrastructure in the field.

The main cost for the truck would be an omni directional antenna based Inmarsat BGAN Satellite receiver. Some other truck infrastructure would need to be considered, printers, cameras and the like as well as a rugged tablet computer, such as an ALGIS.

The applications are relatively small interfaces between other corporate applications.
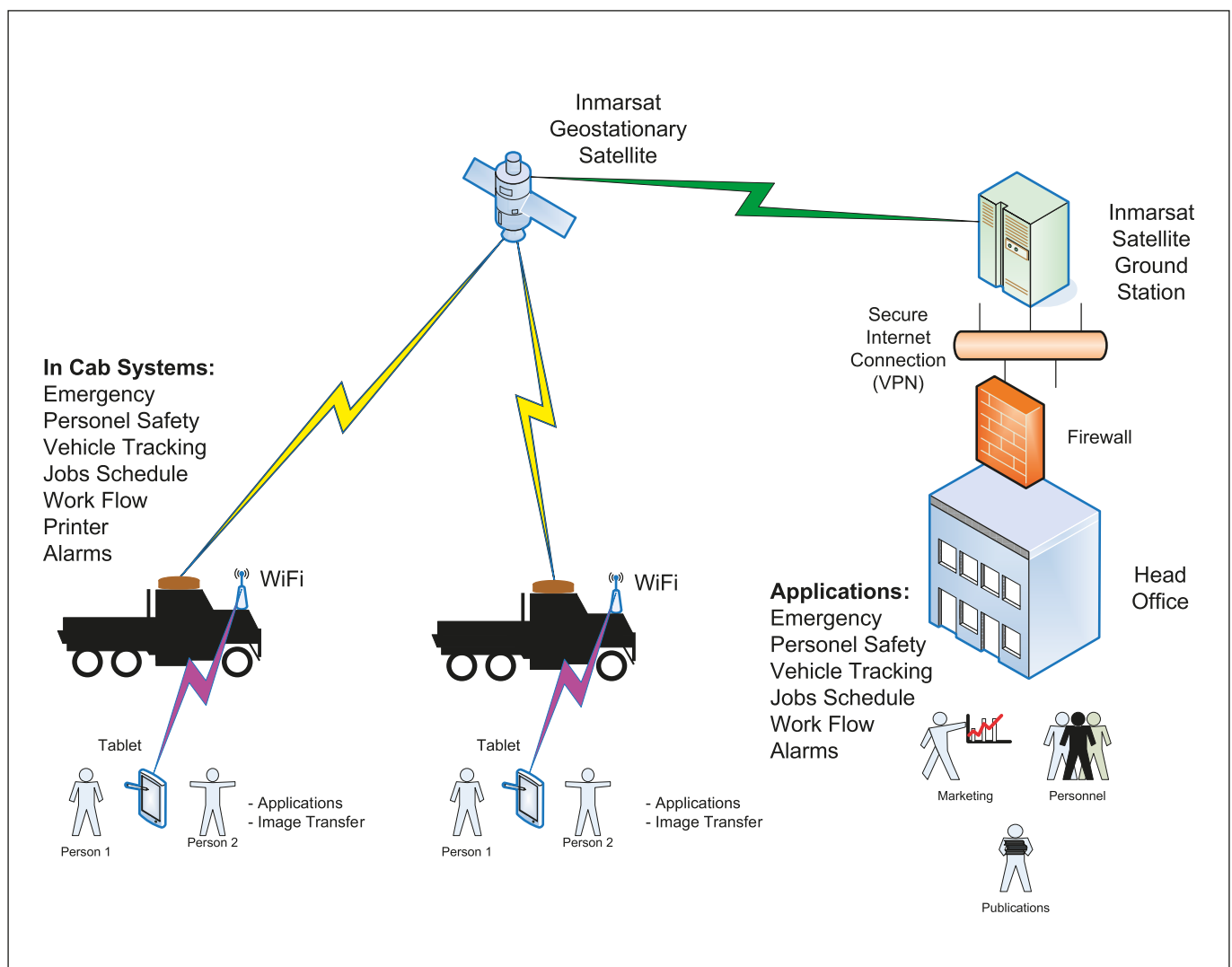
The satellite bandwidth would utilize a special SCAPS tariff package with Inmarsat to allow for, say 1 GB per month, across 100 trucks, where some trucks would use less and some trucks would use more. A cell phone service would also use an aggregated plan for airtime.

The router / firewall settings in the truck and at the central location would be set up to only access the allowed applications, to ensure there is no use of the system for general applications, especially social networks.

General internet connectivity would normally be disallowed through router settings and through use of a secure VPN / APN network supplied by the satellite operator.
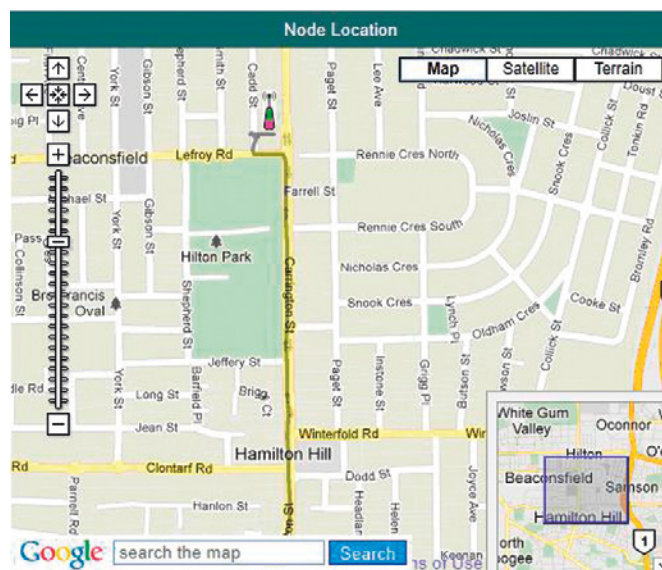
TYPICAL CONFIGURATION

APPLICATION SPECIFIC INSTRUMENTS / INPUTS

Options	Unidata Part Number	Description
Algis Tablet	Custom Part	Rugged Laptop Computer
Ethernet Camera	2502B / C / F	Various IP Cameras
GPS Receiver with 3G / 4G NRL	3004B-MC00	GPS Receiver with Neon Remote Logger

NEON TELEMETRY - NRL / RTU / FIELD UNITS

Options	Unidata Part Number	Description
Ethernet	3016A-000 / 3008A-000	Neon Remote Logger-16 or 8 Analog Ch / Touch Screen Display
Ethernet & 3G / 4G	3016A-C00 / 3008A-C00	Neon Remote Logger-16 or 8 Analog Ch / Touch Screen Display
Ethernet & 3G / 4G and LoRa	3016A-CL0 / 3008A-CL0	Neon Remote Logger-16 or 8 Analog Ch / Touch Screen Display
Equatorial Orbit Satellite - Inmarsat	3016A-00I / 3008A-00I	Neon Remote Logger-16 or 8 Analog Ch / Touch Screen Display
Equatorial Orbit Satellite - Inmarsat & 3G / 4G	3016A-C0I / 3008A-C0I	Neon Remote Logger-16 or 8 Analog Ch / Touch Screen Display
Low Earth Orbit Satellite - Globalstar	3016A-00G / 3008A-00G	Neon Remote Logger-16 or 8 Analog Ch / Touch Screen Display
Satellite - Iridium Short Burst Data	3016A-00R / 3008A-00R	Neon Remote Logger-16 or 8 Analog Ch / Touch Screen Display
Standalone RTU / NRL - Industrial	3004A-00 / 3004A-0L	Neon Remote Logger-4 Analog Ch with or without Touch Screen Display
Cellular RTU / NRL 3G / 4G - Industrial	3004AC0 / 3004A-CL	Neon Remote Logger-4 Analog Ch with or without Touch Screen Display
M – Series Standalone RTU / NRL	3004B-M000 / 3004B-M0B0	Neon Remote Logger-4 Analog Ch with or without Li Battery
M – Series Cellular RTU / NRL 3G / 4G	3004B-MC00 / 3004B-MCB0	Neon Remote Logger-4 Analog Ch with or without Li Battery
M – Series LoRa RTU / NRL	3004B-ML00 / 3004B-MLB0	Neon Remote Logger-4 Analog Ch with or without Li Battery
M – Series Ethernet RTU / NRL	3004B-MEBL	Neon Remote Logger-4 Analog Ch, Li Battery & LCD are optional
M – Series Microsatellite RTU / NRL	3004B-MHBL	Neon Remote Logger-4 Analog Ch, Li Battery & LCD are optional
M – Series Iridium Short Burst Data RTU / NRL	3004B-MIBL	Neon Remote Logger-4 Analog Ch, Li Battery & LCD are optional

NEON APPLICATION SOFTWARE - CUSTOMER SERVER

Options	Unidata Part Number	Description
Neon Applications Software	2302A	Neon Server Software Licence Incl 5 NAL
Neon Applications Software	2302A-10	Additional 10 NRT Access Licence
Neon Applications Software	2302A-20	Additional 20 NRT Access Licence
Neon Applications Software	2302A-50	Additional 50 NRT Access Licence

NEON HOSTING SERVICE - UNIDATA SERVER

Options	Unidata Part Number	Description
Neon Hosting Service	2301A	Neon Data Initial Subscription Setup Fee
Neon Hosting Service	2301A-01	Neon Data Service Fee for 1-50 NRT
Neon Hosting Service	2301A-02	Neon Data Service Fee for 51-100 NRT
Neon Hosting Service	2301A-10	Neon Data Service Fee Metering

DATALOGGER MANAGEMENT SOFTWARE

Options	Unidata Part Number	Description
Starlog V4 Management Software	6308A-AUE	STARLOG V4 Full Licence Key

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