NovaCore SDK Frequently Asked Questions (FAQs)

1. **What expertise do I need to develop an application using the NovaCore SDK?**

   Novatel Wireless' NovaCore SDK is intended for experienced application programmers who are:
   - Familiar with communication systems on the target operating system.
   - Experienced with the supported application development environments- Microsoft Visual Studio 6 or Visual Studio 2005.
   - Competent in the supported application development languages - C/C++.

2. **Does NovaCore SDK come with source code?**

   Yes, the SDK package comes with binaries (a set of DLLs), and sample source code (C++) that demonstrates the use of SDK components.

3. **Do I need to install the Novatel Wireless SDK drivers?**

   If you purchased a laptop with a Novatel embedded device you should not install the SDK drivers. Drivers have already been installed by the laptop manufacturer. You should only install the SDK drivers if you do not have a Novatel Wireless embedded card or device driver.

4. **How do I activate a device?**

   This process is operator specific so there may be variations in the activation and provisioning process. For example, Sprint uses both IOTA (Internet-Over-the-Air) provisioning and OMA-DM, to prepare the device to work on the wireless network. In all cases, please contact the carrier or network operator if you have questions concerning activation and subscriber related questions or requirements.

5. **What is OMA-DM?**

   OMA-DM is a protocol specified by Open Mobile Alliance (OMA) for Device Management (DM) purposes. See http://www.openmobilealliance.org for complete details.

The OMA DM specification is designed for management of small mobile devices such as mobile phones, PDAs and palm top computers. The device management is intended to support Provisioning (Activation), Configuration, Software Upgrades and Fault Management of a device.

The SDK provides methods to start and monitor OMA-DM sessions for supported devices, as part of **Activation Module**. Currently, certain Novatel Wireless devices support Activation and PRL Updates using OMA-DM for certain carriers. Use SDK method **GetOmaCapabilities()** to determine whether the device is capable of performing the desired OMA session.

6. **Can a device be activated under roaming network?**

   While it is technically possible to activate a device under a roaming network, the support and permission to do so is carrier dependent and can be subject to change at any time. Due to this limitation it is best not to attempt activation while attached to a roaming network.

7. **Is Unicode support available for SMS messages?**

   Yes, the **Sms Encoding Module** provided as part of the SDK is capable of encoding and decoding Unicode messages.

   To encode an SMS message using Unicode, set the encoding field of the **SMS_MSG_DATA** structure to **En_UNICODE** when calling method SmsEncodeMessage().

   Note that the number of Unicode characters allowed in an SMS message is less than the number of 7-bit ASCII characters allowed. This information can be retrieved by checking the **SMS_DEVICE_PROP** structure returned from method **SmsGetMessageProperties()**.

8. **What is NDIS or Ethernet mode and how is it different than RAS?**

   NDIS/Ethernet mode is supported on Windows only. With NDIS mode you can configure your modem to connect automatically to enable always-on connectivity much like an Ethernet card. This eliminates the need to use a connection manager or any other means to manually initiate a data connection as in RAS or dial-up mode.

   As soon as the modem is inserted it connects to the network. The connection is also re-established when your computer comes out of hibernate and standby modes.

   Use SDK method **ConnectionMode()**, provided as part of **Connection Module**, to enable NDIS mode. If the device is already connected in RAS mode then the RAS connection is disconnected to enable NDIS mode.

When NDIS is enabled for the first time Windows detects the hardware (a network adapter) again and a "Found New Hardware" message appears in the system tray. The drivers are installed automatically.

9. **Does the SDK package include GPS APIs?**

   Yes, the SDK package includes GPS APIs. They are part of the **Gps Module** provided with the SDK package. The examples also include sample code to demonstrate the use of GPS APIs. However, not all devices support GPS. Please consult the User Guide that was provided with your device to find out if your device supports GPS.

10. **What GPS information can be retrieved from the device?**

    GPS APIs that the SDK provides can be used to obtain the following information from a GPS fix:
    - Location (latitude, longitude and altitude)
    - Velocity (Horizontal, Vertical and Heading)
    - Location Uncertainty (standard deviation)
    - Output formats for NMEA port (GPGGA, GPGSA, GPGSV, GPVTG, GPRMC)
    - Satellite information (number of satellites, Azimuth, Elevation and SNR of Satellites)

11. **Does any special interface need to be implemented in the device driver software to support communication between a Windows based application and the GPS engine on a Novatel device?**

    Drivers provided by Novatel Wireless take care of all device driver level details. SDK users are not expected (and do not require) to do any driver-level work.

12. **Do Novatel devices support the NMEA interface? How should it work with a Windows based application?**

    Yes, the NMEA interface is supported by Novatel devices. Existing location applications which use NMEA data streams can be used with the NMEA/GPS port, but a GPS application developed with this SDK is required to enable and disable the NMEA output. NMEA output allows any of these GPS applications to access the GPS location data provided by the Novatel Wireless device.