Fundamental Approaches to Determining Location
-- Dr. Richard Fuller, Senior VP, Geotrax Protection LLC (moderator)
-- Geoff Smith, VP Systems Engineering, G2 Microsystems
-- Todd Young, Director Product & Business Development, Rosum
-- Dave Reid, Director Wireless Business Development, SiRF

September's well-attended LBS SIG session explored three distinctly different location technologies: SiRF's assisted GPS (A-GPS), Rosum's digital TV-based solution and G2's proprietary WiFi-based solution. The common thread is that all three technologies are currently powering solutions that are available in the market.

Richard Fuller introduced the topic, observing how the current state-of-the-art has produced not just location technologies, but solutions that serve market needs as well. He further observed that these solutions are being applied in specialized enterprise niches as well as in the consumer mass market (e.g., Family-finders and navigation apps).

Geoff Smith kicked off the session by introducing G2 Microsystems' SoC for active asset tracking (via WiFi). Within the supply-chain management market, Geoff highlighted the need for telemetry such as temperature and pressure in addition to location. We learned that G2—like other technologies—leverages a "hybrid" approach to their solutions by augmenting their WiFi-based location with time-of-arrival and "portal-based" (i.e., passive RFID tag/reader) technologies.

Todd Young contrasted Rosum's TV-based location technology to GPS-based location. Todd noted that in urban applications, TV signals are generally 40dB stronger than GPS and penetrate buildings quite well. This offers performance in urban or indoor areas where GPS-based location is challenged.

In particular, because of the ubiquity of TV services, Rosum's technology has been applied to emergency services (e.g., Katrina response). Interestingly, Todd also identified "hybrid" solutions using both TV and GPS, and indicated that the emergence of TV tuner-enabled handsets ("mobile TV") could power a

Rosum-based software-only solution suitable for navigation applications, location-based advertising or TV signal monitoring.

Finally, Dave Reid presented A-GPS location technology, and outlined SiRF's market position which leverages a broad portfolio encompassing 16 million chipsets in PND's and other mobile solutions as well as licensed technology. In similar vein to the other presenters, Dave spoke of a range of solutions: standalone GPS as well as hybrid solutions incorporating WiFi location technology.

In addition, Dave observed that the mobile location market requires a partnership and educational approach from vendors and technology providers. Toward this end, SiRF operates an application developer-focused ecosystem, offering an application "sandbox" as well as support in launching with mobile operators.

Once the individual presentations were delivered, the conversation was opened up to a panel format, with the presenters fielding questions from the attendees.

There were a few questions about Skyhook's wide-area WiFi location technology referred to by Geoff of G2; there appears to be a broad interest in the technical details of this solution. In particular, the group recognized the significant effort required to establish and maintain the MAC address-to-location database.

Other questions related to the market acceptance of LBS, to which the panelists asserted that "LBS is here today", and general optimism towards new innovations in consumer and enterprise applications. All were bullish on the future growth of LBS.

On the technological front, several questions from the attendees questioned about extensions to GPS (more signals and information are coming) and ultra-wideband (UWB) as a location technology (promising, but proprietary and still in its infancy). Panelists agreed that sub-meter accuracy would be demanded by only a small handful of applications.

All in all, it was a highly educational session that illuminated the remarkable diversity of location technologies powering LBS today.