

Security Vulnerabilities of 4G Wireless

The Client: Defense R&D Canada (DRDC)

Client Challenge: Competing standards were being proposed for Fourth Generation (4G) wireless systems. The client required a study of these standards including a study of security issues.

Outcome: Solana successfully completed an 8 month project studying the WiMAX and LTE wireless standards. The project included a study of security vulnerabilities in both standards. The final report provided recommendations for areas that required attention and solutions to ensure effective cyber defensive posture for the Government of Canada. A portion of the work was published in an IEEE conference.

Solution: Solana Networks conducted an in-depth study into the standards, architecture and protocols for 4G wireless networks including LTE and WiMAX. The project focused on study of security threats and vulnerabilities for the two standards, covering security issues from the physical layer to higher IP-based layers.

Example elements of LTE and WiMAX studied and analyzed included Privacy Key Management Protocol (PKM), EAP Authentication, MAC Layer security vulnerabilities, location tracking and security attacks due to the open architectures.