



**(TS//SI//REL) New Iranian NERA Satlink Identified**

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(TS//SI//REL) Earlier this year, [RAINFALL](#) was the source of the first noted intercept of an Iranian NERA Satlink network. This discovery is significant because it will aid in the development and acquisition of tools to help us further exploit this and other TDMA\* technologies, which are proliferating in areas such as Iraq, Iran, and Afghanistan. Users of these technologies include terrorists and hostile governments.

**(TS//SI//REL) The Discovery and Analysis of the Iranian Signal**

(TS//SI//REL) During general search this April, a RAINFALL operator detected a TDMA very small aperture terminal (VSAT) system active in Iran. Off-line analysis of the TDMA burst recovered bits, frame, and a Unique Word (UW -- used for synchronization), leading to the identification of the system as NERA Satlink. NERA Satlink, one of the newer TDMA VSAT systems that provide low cost broadband Internet access to worldwide users, is similar to LINKSTAR and DIRECWAY Internet café systems that are being used by insurgents and terrorists.

[REDACTED]  
(U//FOUO) NERA outdoor unit

(TS//SI//REL) Analysis of the new signal by the Network Analysis Center (NAC/SSG2) and the Digital Communications Technologies Branch in CES (S31211) has revealed valuable information. Complex analysis of the underlying data showed that the Iranian NERA Satlink network was using the MPEG-2/Internet Protocol (IP) instead of the asynchronous transfer mode (ATM), which was previously noted on signals of this type. In addition, the network was identified as digital video broadcasting, return channel via satellite (DVB-RCS) compliant. DVB-RCS is the European Telecommunications Standards Institute standard for Internet traffic over video. These two discoveries will aid in the development of a processing solution.

**(U) Some Background**

(TS//SI//REL) In August 2005, RAINFALL had previously detected a NERA Satlink that was probably emanating from Jakarta, Indonesia. The Indonesian collect was for some time the only intercept available for target analysts to analyze and exploit. According to the NAC, an Iranian company had purchased 170 NERA Satlink modems but they remained undetected until RAINFALL's discovery.

**(U) Who Uses the Signal?**

(TS//SI//REL) One user may possibly be the Islamic Republic of Iran Broadcasting (IRIB), as geolocations (which are believed to be



**SERIES:**

**(U) SIGDEV Collaboration**

1. [F6, NSA Texas, and Yakima Research Station Collaborate on Venezuela Survey](#)
2. New Iranian NERA Satlink Identified
3. [Giving Answers, Keeping Secrets](#)
4. [A Success Story, In Which the MSOC Takes On a Pakistani GSM Network](#)

accurate) placed the signals in the area of the IRIB's Southern SATCOM Headquarters building in Tehran. This may also indicate that the Iranian government uses NERA VSATs.



(U//FOUO) NERA block diagram

### (U) **Collaboration**

(S//REL) Collaboration and analysis efforts between personnel at RAINFALL, NAC, and S31211 are ongoing. In addition, the following personnel played a key role in this discovery:

- [REDACTED], RAINFALL Site Systems Engineering Lab
- [REDACTED] and [REDACTED] (former) RAINFALL Search and New Development position operators
- [REDACTED] S31211
- [REDACTED] Network Analysis Center (SSG2)

RAINFALL is also working with the GCHQ FORNSAT site SOUNDER, trying to match RAINFALL tips with the DVBS hub information that they are collecting/processing.

### (U) **Conclusion**

(TS//SI//REL) In summary, we believe this is a highly valuable mission and intend to continue to pursue further development. Given that the users of this technology include our most sought-after targets, the potential payoff is great.

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\*(U) Note: TDMA = Time Division Multiple Access

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