

tHTTP

« An OTA Solution designed with
security* in mind »

* And fun ! ☺

Goals

- Common OTA solutions suffer from critical vulnerabilities that severely affect and lower the security level.
- But OTA solutions are easily deployed and low-cost.
- Need to build an OTA solution that benefits from both physical network security features and wireless softness.
- Solution : RFCs 1149/2549

RFCs 1149

- Pros
 - Free OTA Transport solutions
 - Medium easily available
 - Low cost
 - Used for/by military communications applications
 - Easy rerouting features
- Cons
 - High delay
 - Low throughput
 - Low data transfer capabilities
 - Subject to many threats and vulnerabilities
 - Does not support fragmentation
 - No more fitted to modern usages.

Good basis : just need to improve & modernize -> tHTTP

tHTTP

- RFCs 1149/2549 Improvements
 - Lower delay
 - Higher throughput
 - Data transferred Crypted (AES) and signed (GnuPG)
 - All OS compatibilty
 - RFCs & De facto standards compliant
 - Secured by design*
- Capabilities
 - 13 Mb/sec min. throughput
 - Volume of data does not depend on transport media, can increase easily.
 - ZeroConf-like network routing (dynamic rerouting supported).

* And funny !

RFC1149 Implementations

RFC 1149 : Transmission of IP Datagrams on Avian Carriers
Some typical RFC1149 OTA Implementations :

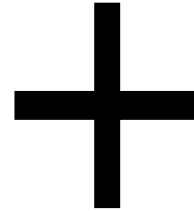


Typical RFC1149 Threats & Vulnerabilities :



tHTTP Implementation

- Tiny Helicopter Transport Protocol
- MooSSTIC v1 : 1st tHTTP operational implementation :



Demonstration

What's Next ?



- Capacity improvement
 - Better throughput
 - Up to TeraBytes transferred at once
 - Already in test in our Lab (Issy les Mlx Heliport)
- HPTables
 - HTP Firewalling solutions for Linux kernel
 - Unknown or unauthorized HTP messages are dropped by USB driven RST packets.
- IPv6 support
 - No, just kidding... ☺



Thanks !