



# Lane Level Security

September 2016



Transponder



What are you trying to protect?

- Banking information?
- Government secrets?
- Trade secrets?
- Personal documents or information?
- Other?

Unique Identifier Only

What are the threats?

# Threats

Counterfeit Transponders



0x1111222233334444



0x1111222233334444



0x1111222233334444



0x1111222233334444

# Cloning



0x1111222233334444



0x1111222233334444



0x1111222233334444



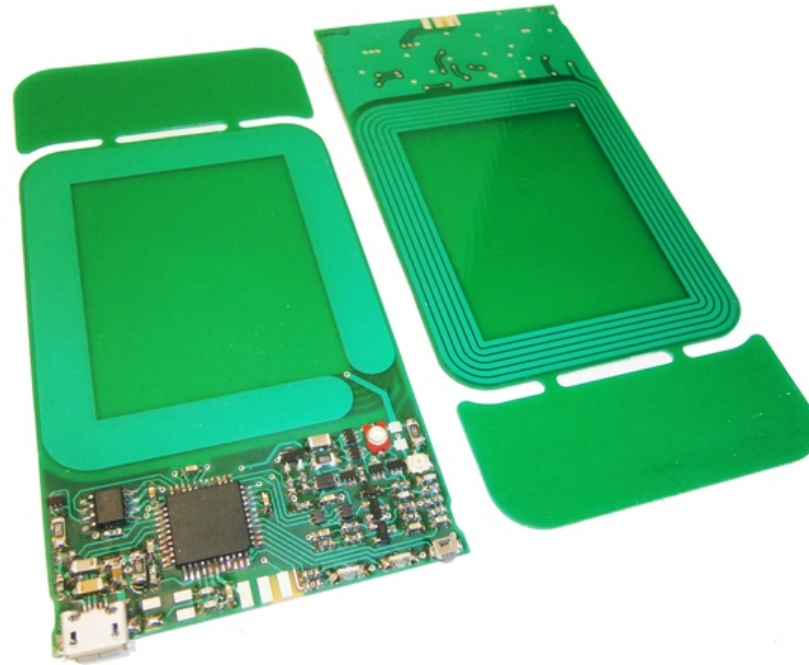
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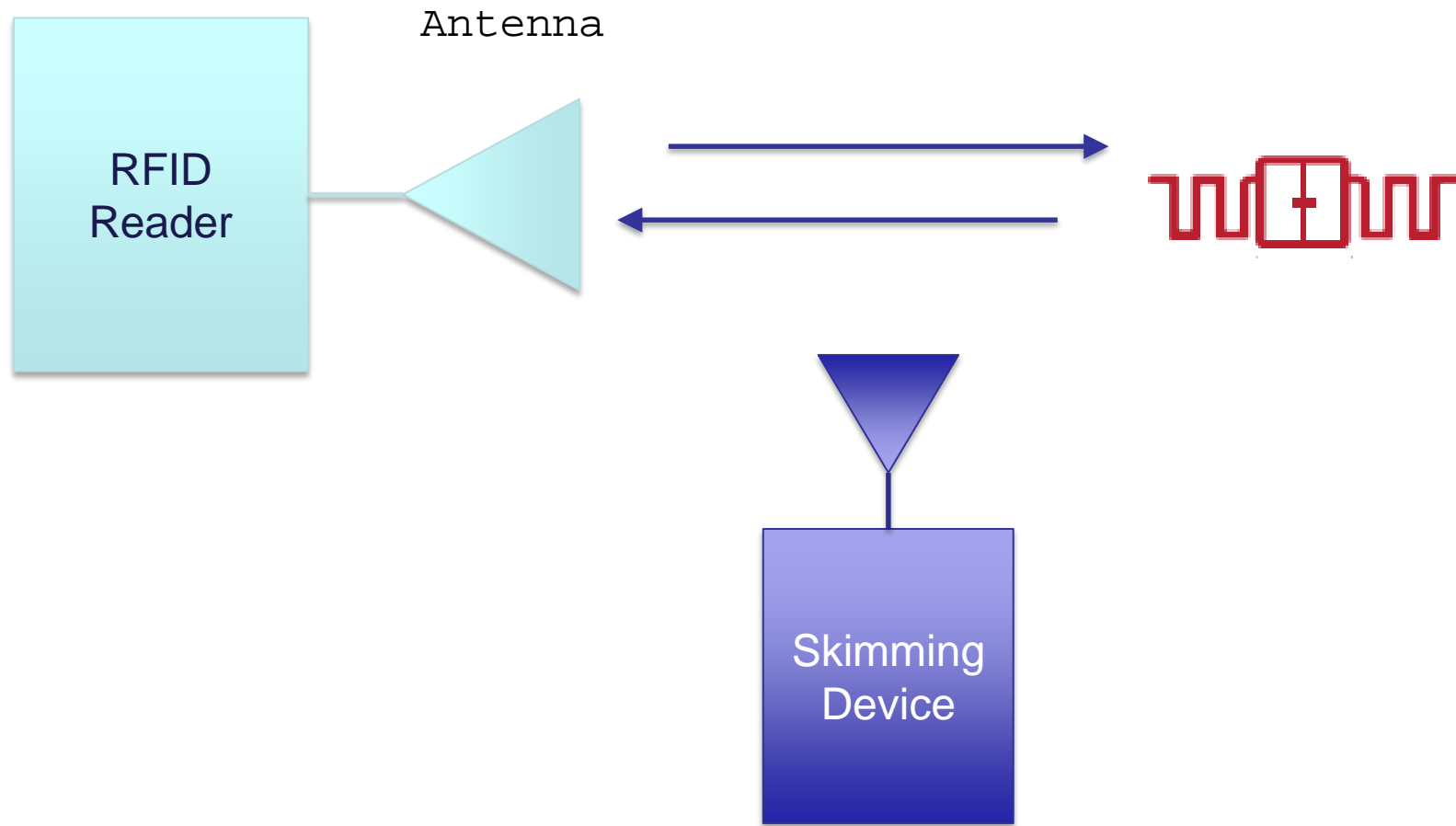
# Transponder Emulator



# Threats

Counterfeit Transponders

Skimming



# Current Protocol Technologies

ISO 18000-63 (6C)

Super eGo (ISOB 80k)

TDM (IAG/EZ-Pass)

# ISO 18000-63

- Pre-2013
  - Protected Access Password
  - Allows for Reader Authentication
  - Specific commands required for tag to respond
  - Critical and Precise Timing Requirements
- Post-2013
  - Cryptographically Strong
  - Data Hiding

# Super eGo

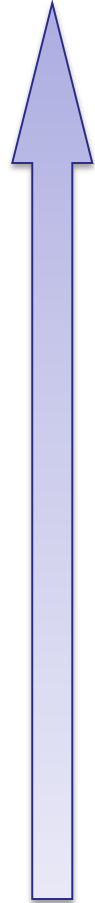
- Based on the ISO 18000-6B protocol standard
- Timing requirements
- No Access Password
- Encryption ?

# TDM

- Very fast
- No security features
- Shares all transponder data



More secure



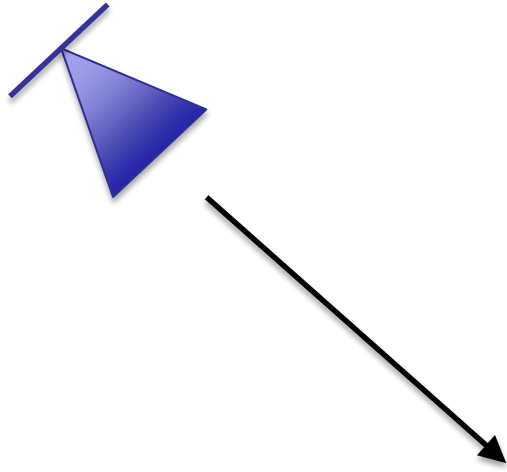
ISO 18000-63

SeGo

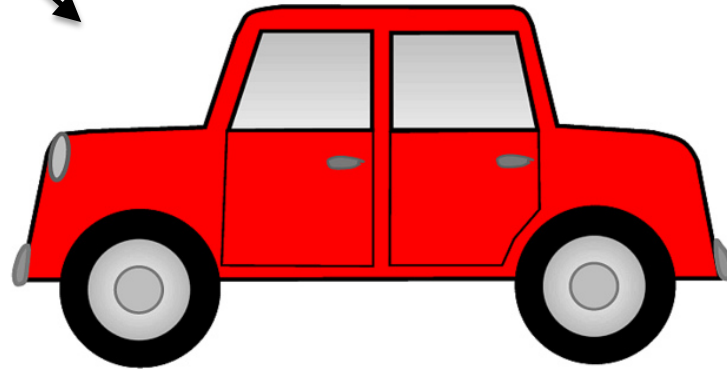
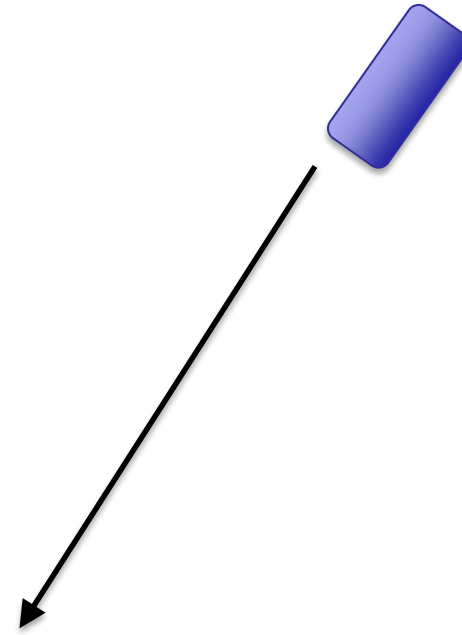
TDM

What does this mean?

RFID Reader



ALPR Camera



# Video

- ALPR enables enforcement
- In lane video enables audit

What's next?

# Stephen Lockhart

slockhart@star-int.net

