



Visually understanding jam resistant communication

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Overview

- **The problem**
- **A solution**
- **Visualizing it**



The Problem

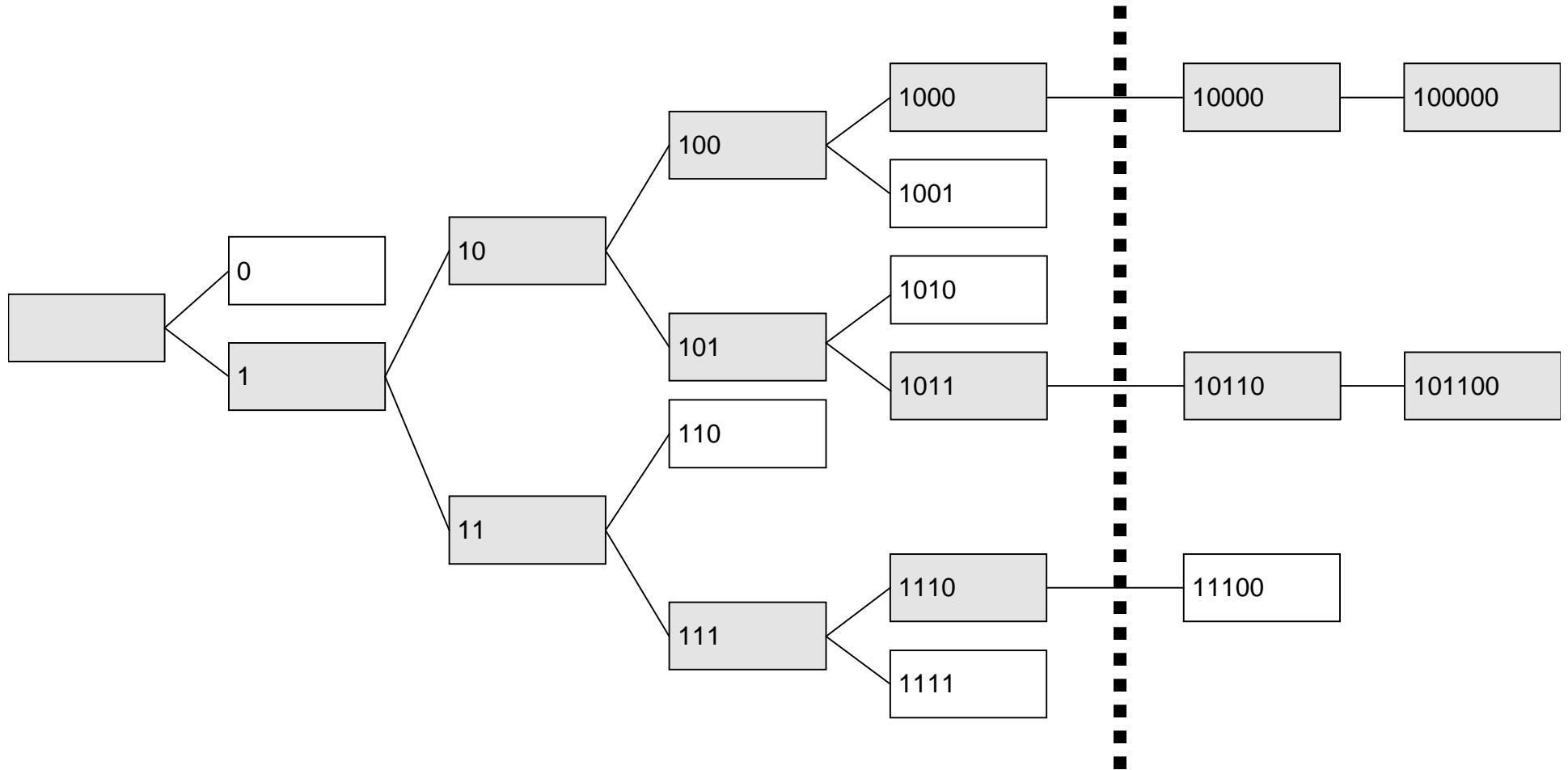
- **Need to wirelessly communicate in a noisy/hostile environment**
 - Example of vulnerable system: GPS
- **Do not want to use a shared secret**
 - Traditional techniques rely on a key
 - Does not scale to netcentric environment



A Solution

- **Concurrent coding**
 - Subset of superimposed codes
 - Allows multiple messages to be simultaneously sent and decoded
 - Efficient in encoding/decoding
 - Can be implemented on existing hardware
 - “technology agnostic”
- **BBC algorithm**

BBC Decoding





Communicating It

- **Need to “sell it” to top-level management**
- **Decision makers not always technically astute**
- **Even without the math, hard to grok subtleties**
- **Showing a demo on a radio is unimpressive**
- **Sound version hard to understand subtleties**
- **Solution: use the power of visualization**



BBC Vis Applet

Message: Up to 10 characters

Tree Lines

Number of Checksum Bits ▼

Bit Image:

0.0%

Decoded Msgs:

DECODING TREE



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