

STUDIO E SVILUPPO DI UN SISTEMA BASATO SU POLARIZZAZIONI ORTOGONALI PER LA TRASMISSIONI DI DATI CRITTOGRAFATI

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Abstract

La trasmissione sicura di dati su canale wireless è un argomento molto sensibile e che attira molta attenzione nell'ambito della sicurezza nelle reti. Partendo dal concetto che ogni metodo di crittografia dei dati, per buono che sia, come stato creato possa anche essere decodificato, vogliamo trovare un metodo a pi basso livello (livello fisico) per introdurre complessità nell'intercettazione delle comunicazioni wireless. Il progetto consiste nello sviluppo di un metodo di trasmissione che utilizzi diverse polarizzazioni per separare fisicamente il canale in "sottocanali" ortogonali che non interferiscono l'uno con l'altro. Ipotizzando che un intercettatore non possa distinguere le componenti del segnale a diversa polarizzazione quello che si riceve è la somma dei diversi contributi, solo conoscendo il tipo di polarizzazione utilizzata e la sequenza con cui queste vengono adottate nel tempo è possibile distinguere e decodificare il contenuto informativo trasmesso sui diversi sottocanali. Il progetto si conclude con la realizzazione di una demo che mostri 1. come trasmettitore e ricevitore dividono informazione e chiavi crittografiche sui diversi sottocanali e 2. l'informazione ricevuta da un intercettatore al variare della tipologia di antenna (e polarizzazione) utilizzata.

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