

# CCNA 1

## Introduction to Networks



**CISCO**™



# Şedinţa 4

1. Physical Layer
2. Tipuri de medii fizice
3. MDI vs. MDIx
4. Straight – Through vs. Cross - over



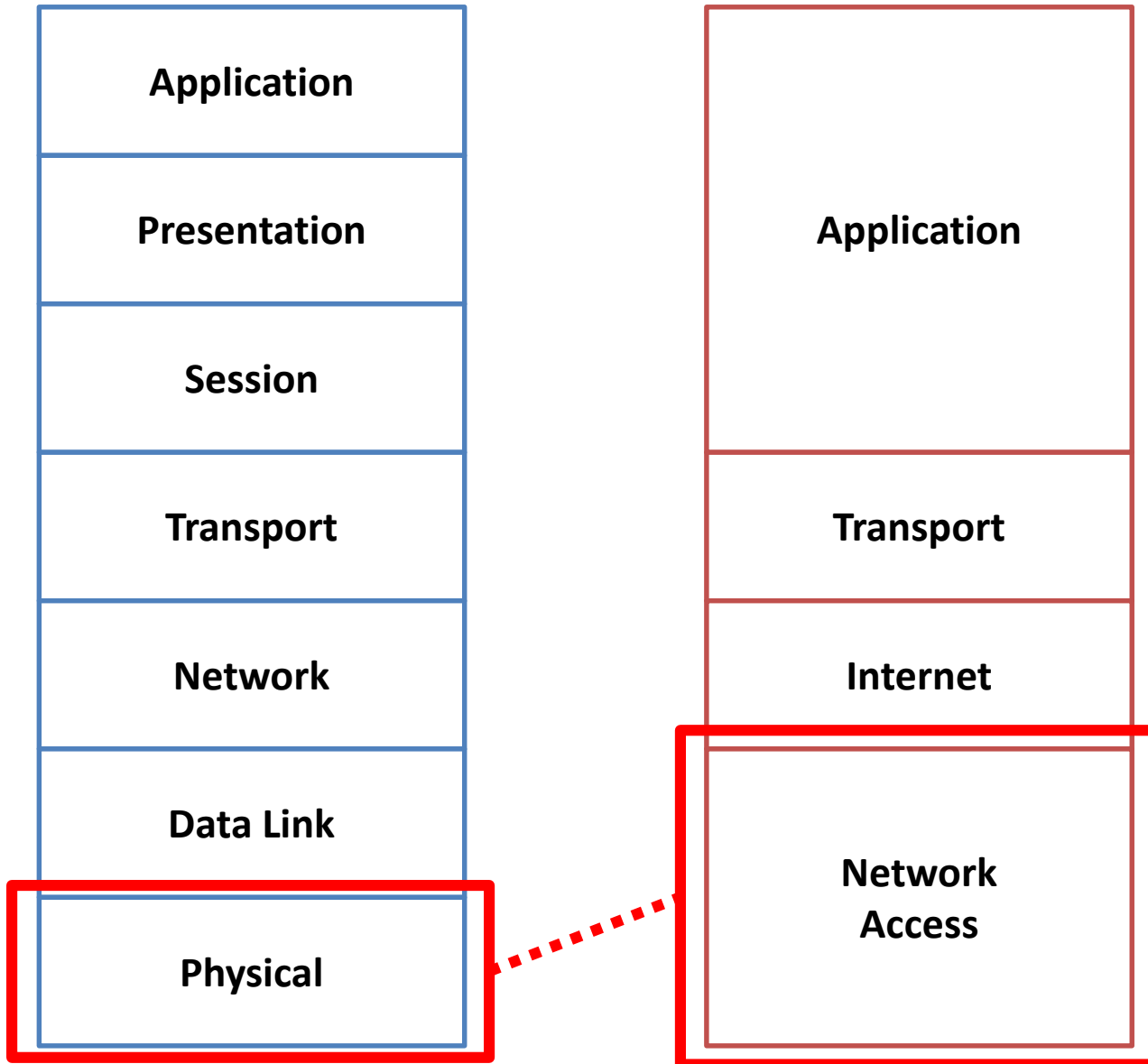
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# Funcții Layer 1

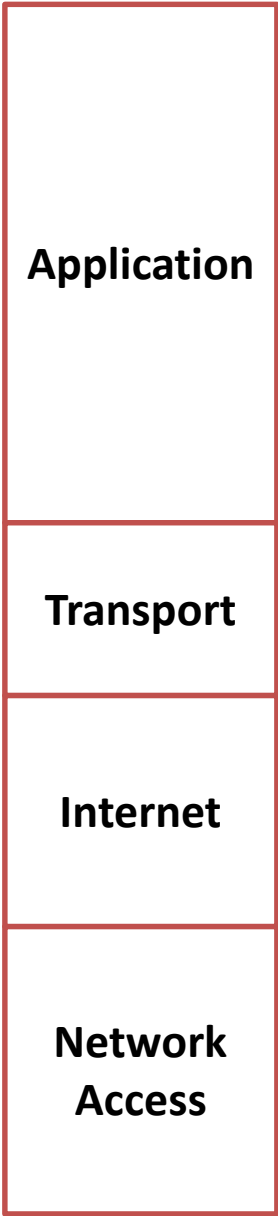
Definirea:

- Tipurilor de *interfețe* folosite de către hosturile din rețea
- Tipul *cablurilor* folosite la interconectarea dispozitivelor în rețea
- Tipul *conectorilor* folosiți
- Modul de aranjare a *pinilor*
- *Codarea / Decodarea* mesajelor prin convertirea biților în elemente fizice (în funcție de mediul de transmisie): tensiuni, semnale luminoase, unde radio



# Layer 1 = Biçi

Încapsulare



**SEGMENT**



**PACHET**



**FRAME**

.....1010101110001010101111.....



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## Standardele definesc:

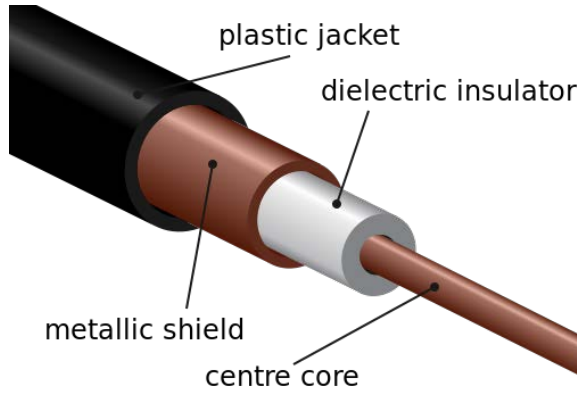
- Tipul de *cablu*
- *Banda* în care funcționează acesta
- *Lungimea maximă* a cablului / Susceptibilitatea la interferențe
- Tipul *conectorilor*
- *Pinout* – aranjarea pinilor / Codul culorilor



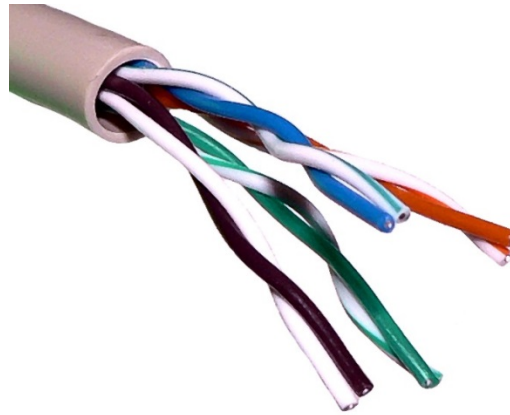


# Cabluri de cupru:

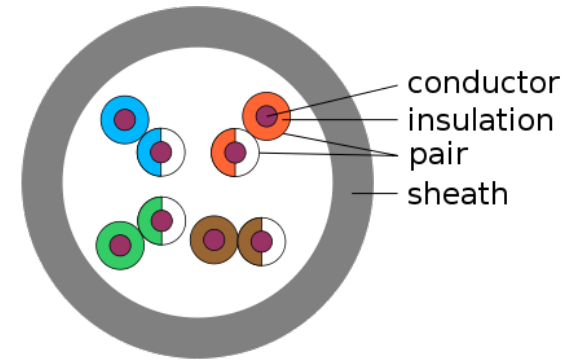
Coaxial



UTP – Unshielded Twisted Pair

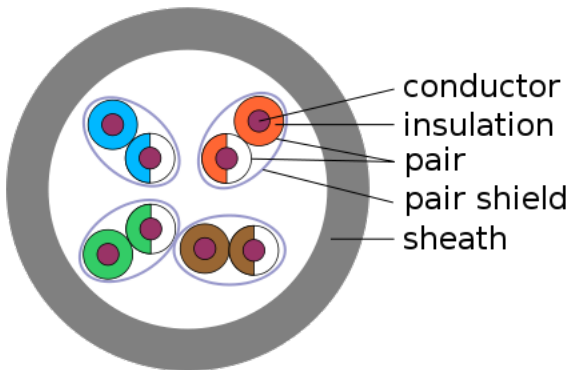


UTP

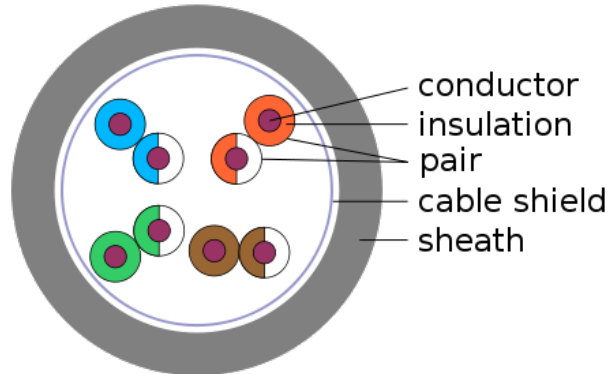


STP – Shielded Twisted Pair

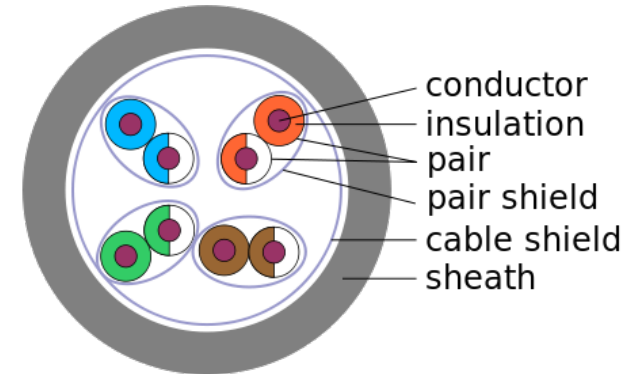
STP



S/UTP



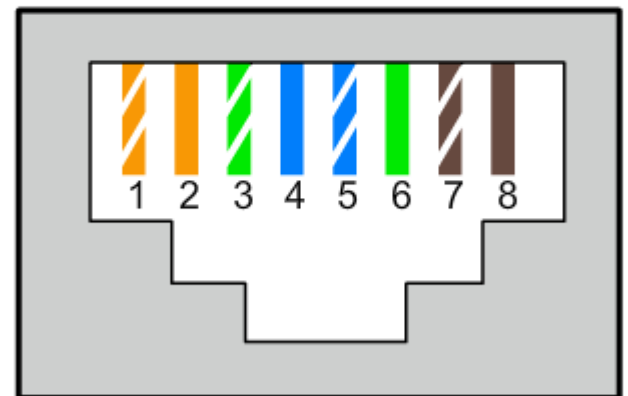
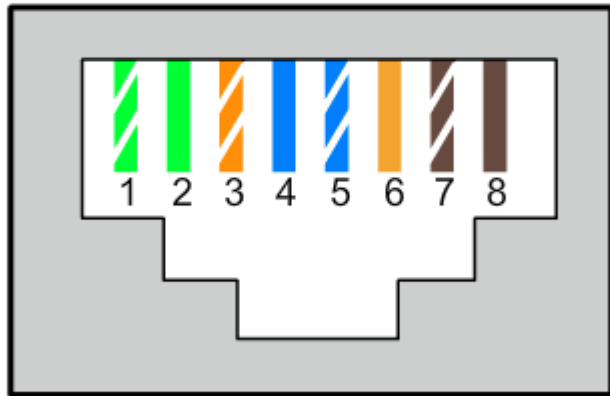
S/STP





Pair 2

Pair 3

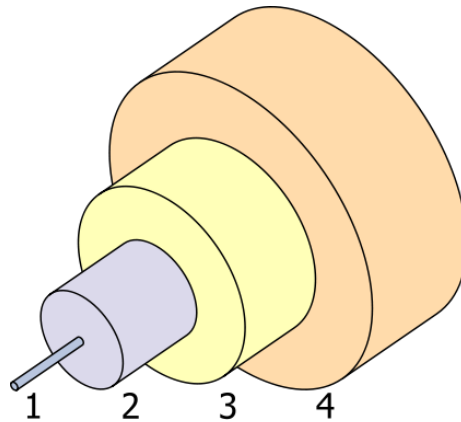


T568A

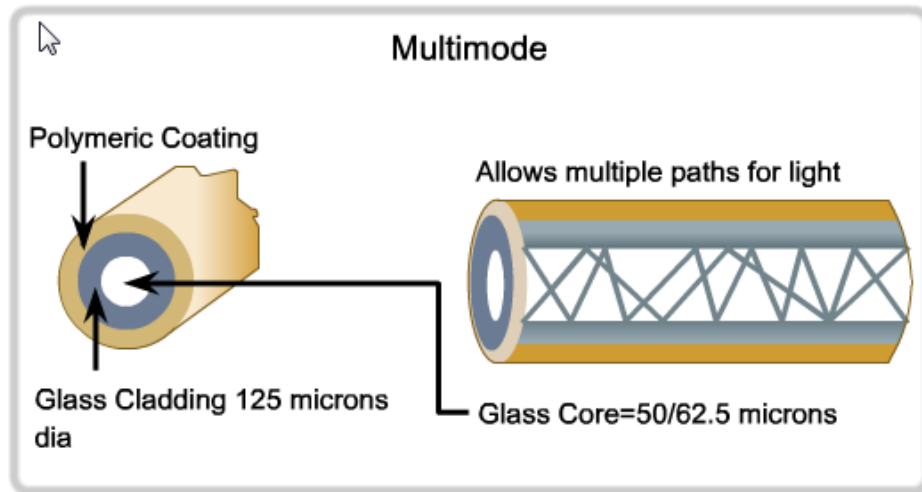
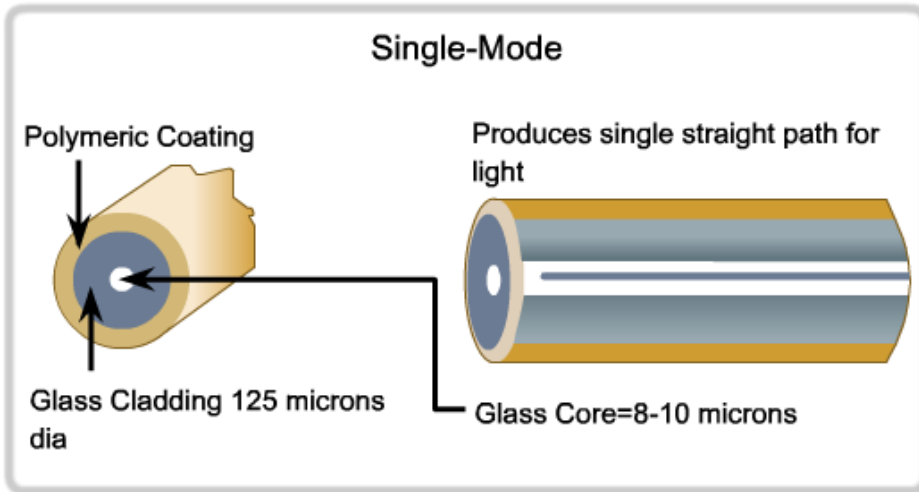
T568B



# Fibra optică:



1. Core
2. Cladding
3. Buffer
4. Jacket



ST



SC



FC



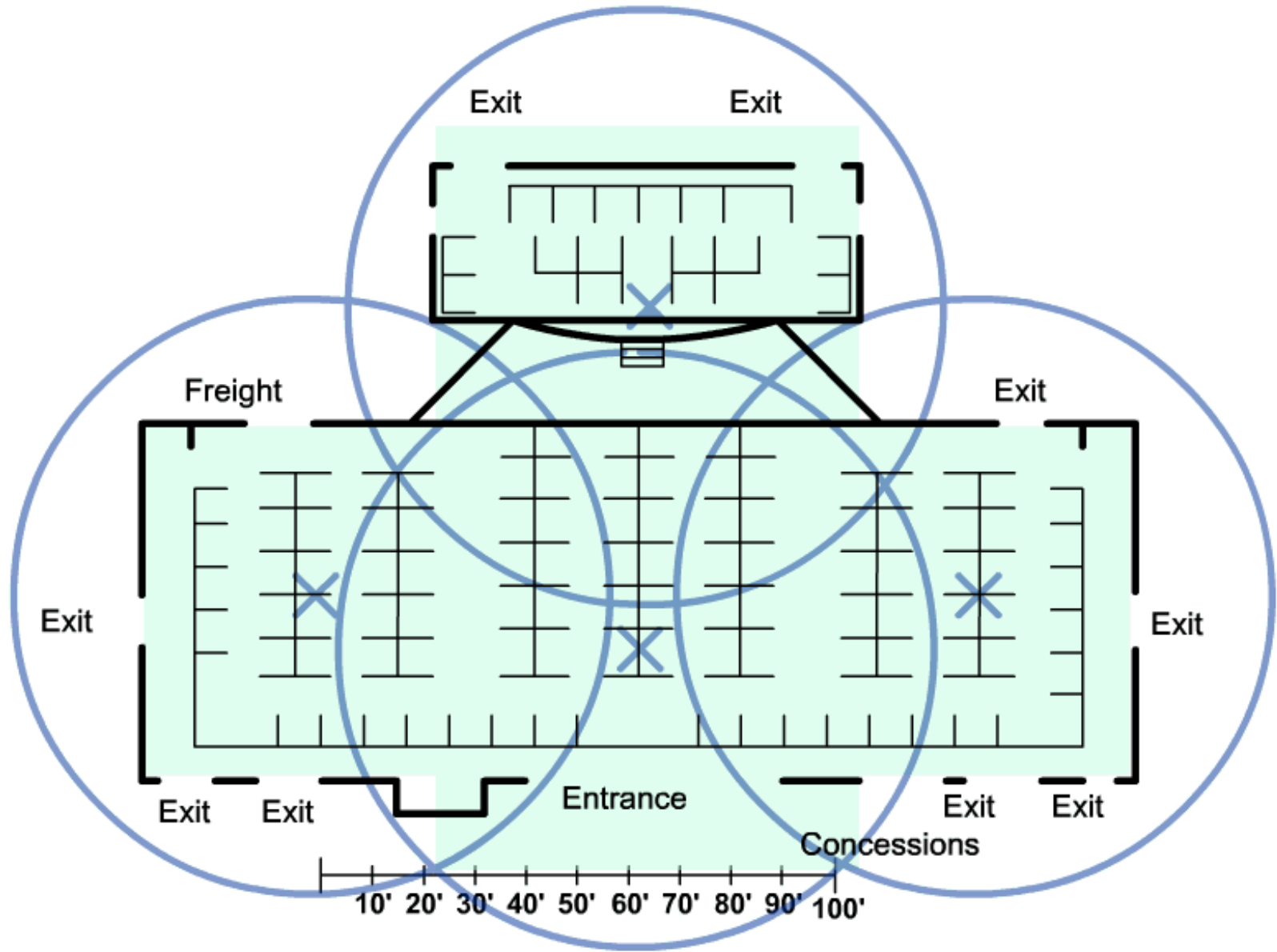
LC



# Wireless:

Protocol	Ratificare	Frecvență	Viteză
802.11 a	1999	5 GHz	54 Mbps
802.11 b	1999	2,4 GHz	11 Mbps
802.11 g	2003	2,4 GHz	54 Mbps
802.11 n	2009	2,4 / 5 GHz	72,2 / 150 Mbps
802.11 ac	Ianuarie 2014	5 GHz	Up to 866 Mbps



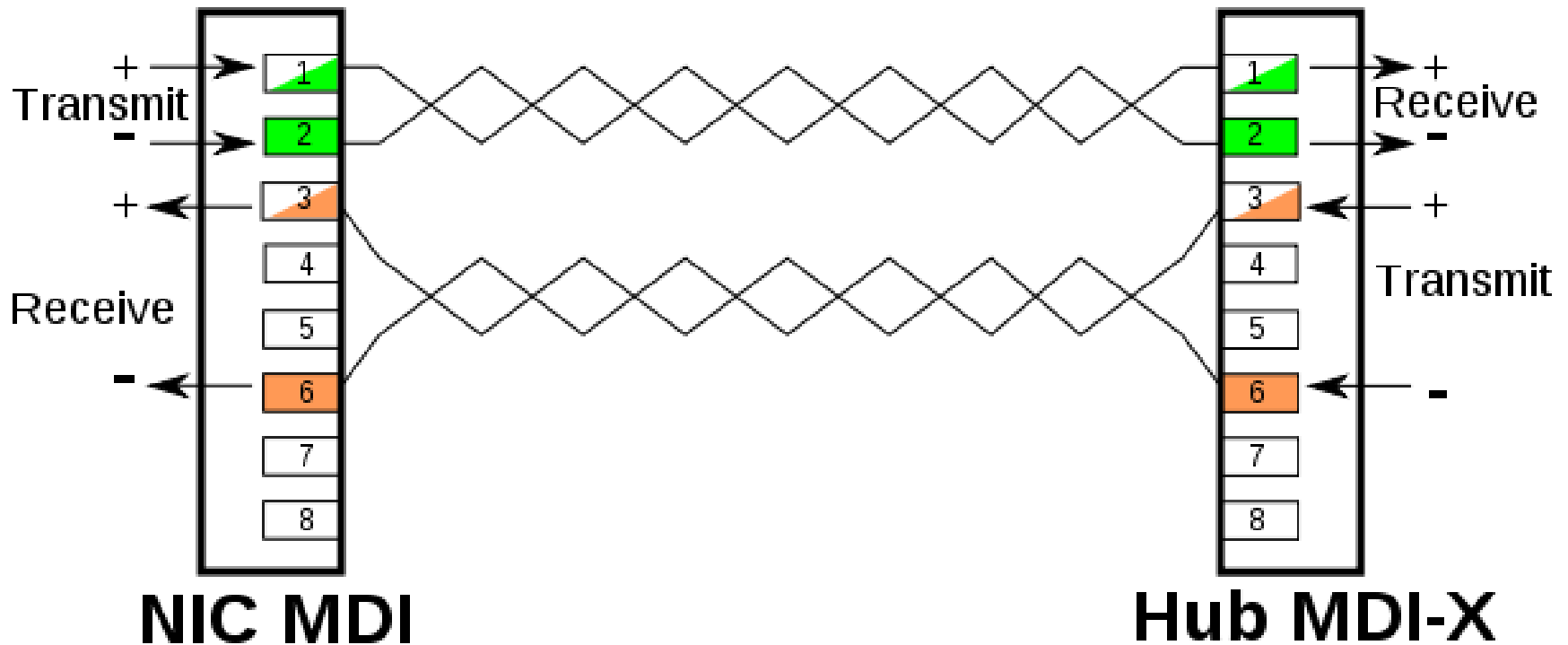


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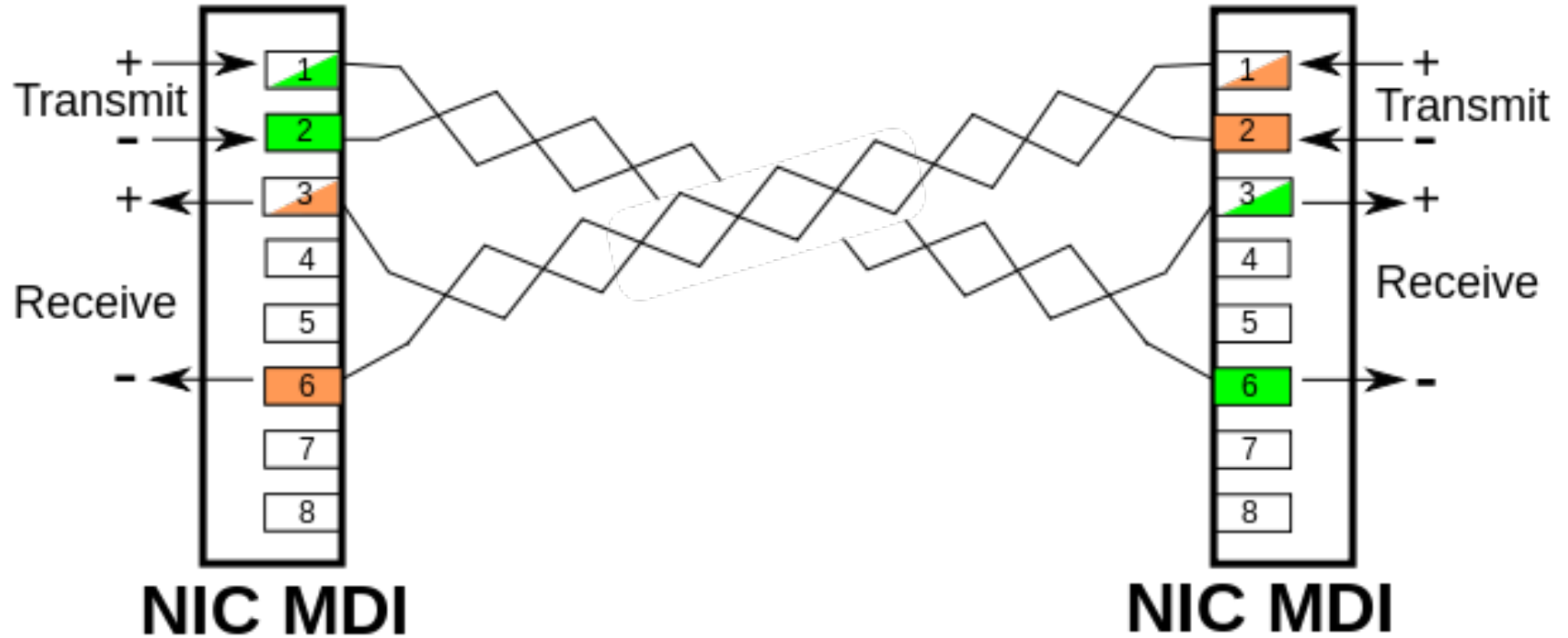
**MDI** = **M**edium **D**ependent **I**nterface

**MDIX** = **M**edium **D**ependent **I**nterface **C**rossover



Cablul folosit = **Straight - Through**





Cablul folosit = **Cross - Over**





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