Residential Premise Cabling
Agenda

• Business Overview on Residential cabling
• Residential cabling in India – a new market place
• Multimedia Solutions
• Future applications
Residential Application

- Voice
- Video
- Data

- Entertainment (Video/Audio)
- Voice
- Surveillance/Life Safety
- Home Automation
- Data
- Fire Alarm System
- Environmental Control
- Intercom
Residential Cabling

- Telephone
- VDT (HFC/XDSL/FTTC/FTTH)
- Cable TV
- Utility
Residential Application – Single family

Example of an integrated telecommunications system
Residential Campus Backbone

- Backbone Cable to Other Buildings
- Backbone Cable to SP
- Pedestal
Residential Premise Cabling

Access Provider(s)

Demarcation Point

ADOs

DD Cord

DD

150 m (492 ft) Maximum

Equipment Cord

Telecommunications outlet/connector

Outlet Cables

Electronic Equipment

ADO Cables

Network Interface Device

Access Lines

Beyond Scope of this Standard

100 m (328 ft) Maximum

Beyond Scope of this Standard

90 m (295 ft) Maximum

100 m (328 ft) Maximum
Residential Cabling - New Marketplace

- ANSI/TIA/EIA-570-B establishes different terminology, components, procedures
- Proprietary solutions around
- Many TIA standards apply
- Differing business models for single-family and multi-family, prewire and retrofit in building
Many new telecommunications technologies are being developed for the home market. You need to stay connected more now than ever.

ANSI/TIA/EIA 570-A is an industry-recognized standard developed and supported by major technology manufacturers.

ANSI/TIA/EIA 570-A was written to be vendor and technology independent to support a wide range of applications and services.
Home automation systems

- Cabling for home automation systems may include voice, data and video cabling, security cabling, lighting and climate control cabling and audio cabling.
- These systems may use Category 5e or 6 cabling for communication between devices using control, data or Internet protocols.
- The manufacturer of the lighting control system should be consulted to determine the type of cable.
Single-Family vs Multifamily

- Multi-family outpaces Single-family by 2 to 1
- Single-family prewire SCS installation *completely different* from multi-family SCS prewire
- Retrofit *completely different* from prewire in new construction
Retrofit vs New Construction

- Retrofit of existing homes and prewire in new construction have different market today

- Retrofit *completely different* from prewire in new construction
Two Grades of Residential Cabling

TIA 570-B establishes two grades of cabling for residential applications.

- Grade 1 is a minimum basic residential cabling system.

- Grade 2 provides additional capability for current and future high speed advanced data and multimedia telecommunications services.

Grade 2 is a better quality residential system. Grade 1 is sufficient for basic telecommunications services such as telephone, cable television, satellite services, and basic data services.
## Residential Services

### Service

<table>
<thead>
<tr>
<th>Service</th>
<th>Grade 1</th>
<th>Grade 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Television</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Data</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Multimedia</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

### Cabling

<table>
<thead>
<tr>
<th>Cabling</th>
<th>Grade 1</th>
<th>Grade 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-pair UTP</td>
<td>Category 3; Category 5 cable recommended</td>
<td>Category 5; Category 5e cable recommended</td>
</tr>
<tr>
<td>75-ohm coax</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Fiber</td>
<td>X (optional)</td>
<td>X</td>
</tr>
</tbody>
</table>
Grade 1 Residential Cabling

Grade 1 consists of one Cat3 cable and one 75-ohm coaxial cable placed to every outlet.

Grade 1 is the minimum TIA 570-A standards-compliant cable system.

Recommended upgrade for Grade 1 cabling is to use Cat5 cabling in place of Cat3 cabling.
Grade 2 Residential Cabling

Grade 2 consists of two Cat5 cables and two 75-ohm coaxial cables placed to every outlet.
Two upgrades recommended for Grade 2 are to substitute Cat5E cabling in place of Cat5 cabling, and add fiber cables to each outlet.
Star Topology

TIA 570-A compliant residential cabling systems, including both Grade 1 and Grade 2, are arranged in a star topology.

This means that every outlet cable is wired directly back to the distribution device. All cables are placed in a homerun configuration. Outlet cabling cannot be "daisy-chained." This applies to all UTP, coaxial and optical fiber cables.
Recognized outlet cable include:

- 4-Pair 100-ohm UTP (category 5e, 6)
- Series 6 coaxial (commonly known as RG6), tri or quad-shield
- Series 59 coaxial (commonly known as RG59) for baseband closed-circuit television (CCTV) only
- Optical fiber (50/125 μm, 62.5/125 μm multimode, Singlemode)
Residential Cabling – Indian Market

• Indian Real-estate moving towards Lifestyle Residential infrastructure
• Broadband Internet access in the Asia-Pacific region has experienced aggressive growth in the last decade.
• Residential cabling also possesses as a significant opportunity in the Indian SCS market.

“Indian economy is now driven by younger generation and they are now hungry for newer technology, higher bandwidth and lifestyle infrastructure, therefore we can expect a good growth in the coming days”
Internet access in the Asia-Pacific region has experienced aggressive growth in the last decade.

The market drivers for this are Broad-band subscribers, VoIP, IPTV, Multimedia networks, Online gaming and Fiber-to-Home

The concept of residential cabling is intended to support existing and emerging Technologies including Voice, Data, Video and multimedia.
Despite a challenging housing market, the demand for home technology shows no sign of declining.

Systems for security, home entertainment and home automation are must-have checklist for new home buyers.

Installed infrastructure like high-speed wiring, and the adoption of broadband enable the growth of whole-home networks for digital media as well as data.

Consumers want technology in the home, but many might be unaware of the available options.
SCS Market Segment - India

Source: IDC 2009
Multimedia Solution

Wide choice for variety of ports

In addition to legacy ‘RJ45’ Connector for Voice, Video, Data, we can have

• Fiber Port
• HDMI Port
• Audio Port
• DC Socket
• Coax Port
and you name it....
Multimedia Solution
Pay-TV and Video-on-Demand Potential in India

• The cable industry has dominated the pay-TV market since the early nineties but is now facing competition from DTH and IPTV.
• DTH growing strong in India - to capture 24.6% of the total pay-TV subscriber base by 2012
• 11.1% of subscribers – to be covered by cable-CAS.
• Overall growth of cable subscribers, including cable-CAS and cable-non CAS, to be 0.51% CAGR.
• Slow growth of IPTV during the forecasted period due to lower broadband penetration in the country.
Sources of Industry Data

- Telecommunications Industry Association (TIA)
- MultiMedia Telecommunications Association (MMTA)
- Electronic Industries Alliance (EIA)
- Consumer Electronics Manufacturers Association (CEMA)