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RFO

RF
video
extender

Reach farther, spend less

extend your RF Overlay coverage
with a low cost solution

Innovative & low cost

Reach more clients

Television has an undeniable relevance in modern society. Operators that provide TV services compete every day for new customers. With the traditional solutions, extending the service coverage will require substancial investment. RFO is the ideal solution for expanding TV signal coverage to new geographical areas, while reducing CAPEX and OPEX costs and ensuring the quality of service.

Traditional TV transport

With the fiber network massification and availability the transport of TV signals is currently deployed using fiber optics.

Current limitations

In analog transmission over fiber scenarios the increase of the distance degrades the signal quality. Changes in the TV channel plan imply headend reconfiguration in IP transmission scenarios.

Business benefits

- **Reduce CAPEX and OPEX - compared with the traditional solution:**
  Reduced investment on remote headend equipment, simplified management, low power consumption (50 watts) and reduced footprint (1RU).

- **Provide flexibility:**
  Agnostic to different video standards and signal formats and transparent to TV channel plan changes.

- **Ensure system's reliability:**
  Signal processing based in robust HW scheme and transmission redundancy and protection.

- **Simplify the operation:**
  Plug and play solution and no configuration required.

RFO

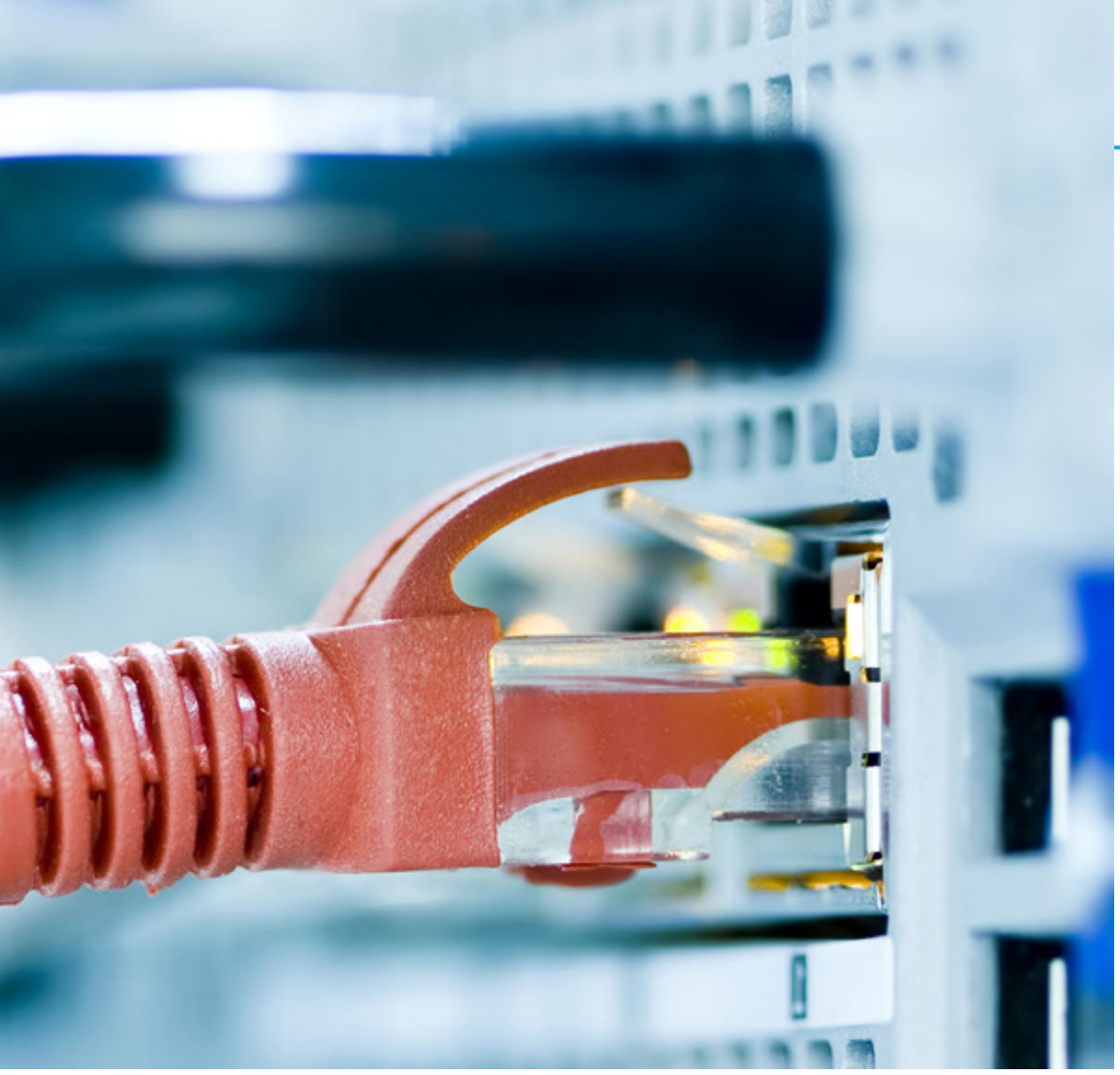
Unique, flexible and affordable
Ideal solution to extend the transport of TV signals over optical fiber

Challenge

How do we transport the TV signal over optical fiber across long distances without signal degradation and at the same time reducing costs?

Solution

Digitalizing the RF TV signal will make it more robust to distortions and interferences allowing higher transmission ranges.



Key differentiators

- CAPEX and OPEX reduction;
- Installation simplicity;
- Agnostic to different format, and video signals standards;
- Reduced energy consumption;
- Reduced size;
- Simplified network architecture;
- High level of quality and signal integrity.

Reduced investment

Extended coverage

Lower complexity

Higher efficiency

Less equipment

More savings

Who benefits from it?

cable

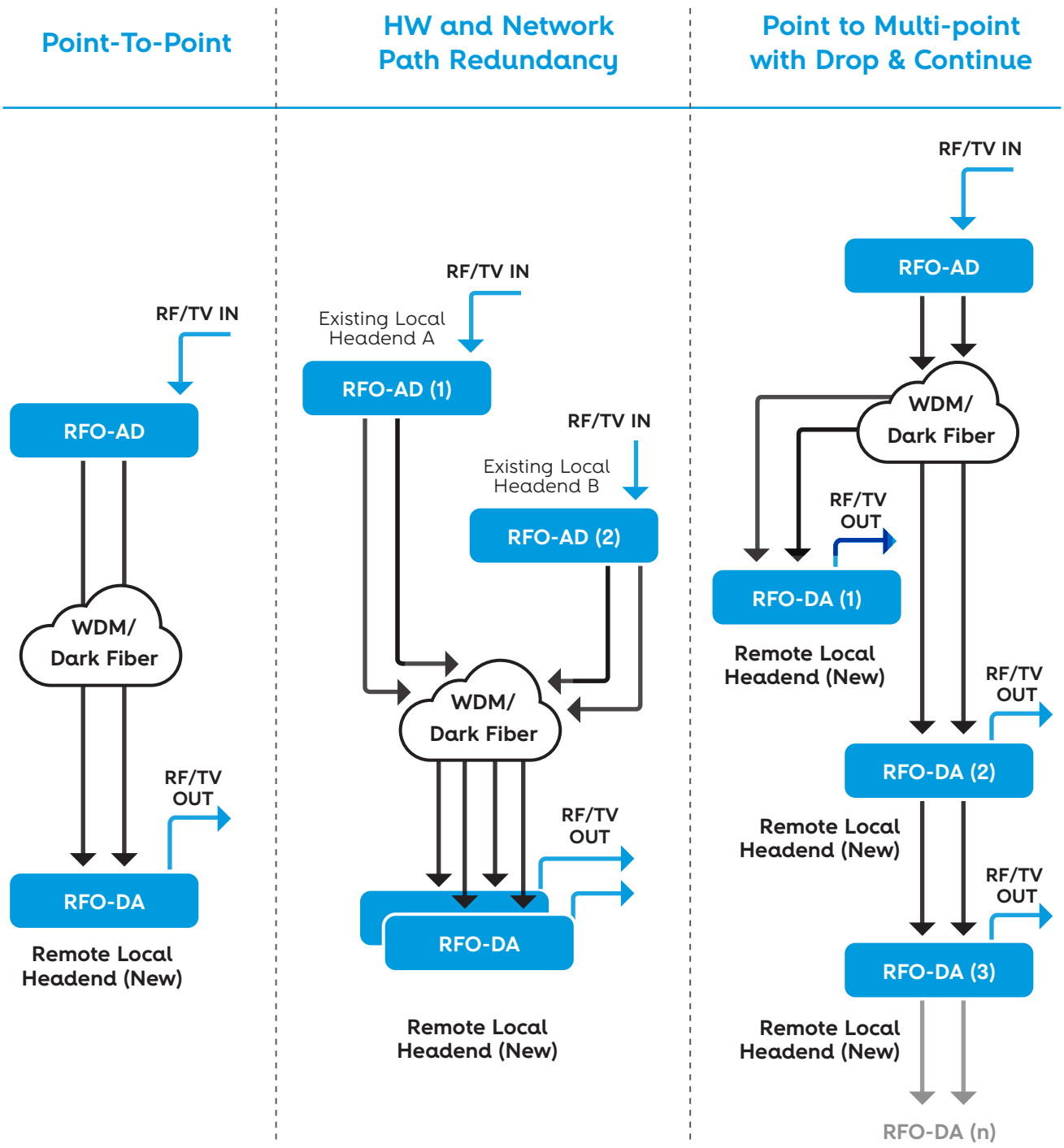
Tv Operators

Enabling new operator business models

The architecture

The solution is composed by two sub-systems performing complementary functions, RFO-AD and RFO-DA, both interconnected by an optical network. RFO-AD receives a video channel bouquet signal and converts it into a digital format so that it can be transported over long distances without losses. On the other hand, RFO-DA receives the digital signal and recovers it into the original format while keeping the signal quality and integrity.

Redundancy can be introduced using two different signal sources transmitted to the same remote node.RFO-DA can be used to cascade the TV signal along the network.

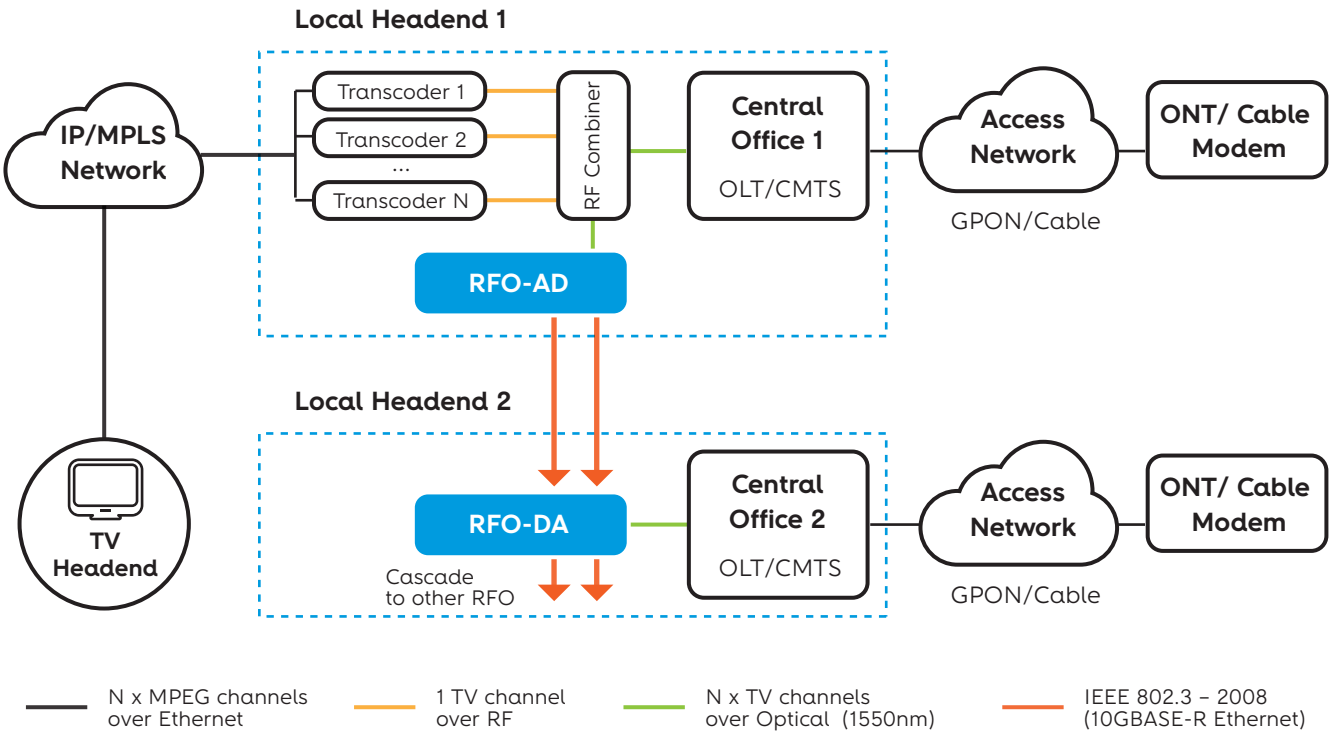


Use cases

RFO is the right solution whether you have a GPON or Cable network.

RFO interconnects a Local Headend where the combined RF signal already exists (Local Headend 1 in the picture above) to a second Local Headend (Headend 2) with several perceived advantages:

- **No need of having transcoders** and RF combiner at the second Local Headend;
- The RFO D/A (receiver) can be used to **cascade the same signal to another RFO** D/A in a different location or to extend reach of the RF signal;
- Only **two RFO equipments needed** per link;
- **No configuration and no adjustment** needed of the RFO equipment;
- **No need for operation procedures** or additional equipment if there are changes on the number of channels or frequency allocation.



"Overcoming the challenge"

Elsa Rebocho, Head of the Access Network Technologies Area, PT Portugal

References

Customer

- PT Portugal

Motivation:

- Expansion of service in rural areas

Application scenario:

- 16.000 real customers;
- Expansion to new low density areas;
- Replacing legacy headends in high density areas.

Added value:

- End customer satisfaction;
- Capex savings;
- 10x less power consumption;
- 40x smaller footprint;
- Increased revenue.

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About Altice Labs

Delivering key telecommunications technologies since 1950, Altice Labs has been shaping the future of technology, enabling Communications Service Providers and Enterprises to offer advanced and differentiated services to their customers and users.

Altice Labs is an innovation and transformation catalyst supported on a strong and dynamic Innovation Ecosystem. Through technology, we are committed to improve people's lives and the way in which companies do business.

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