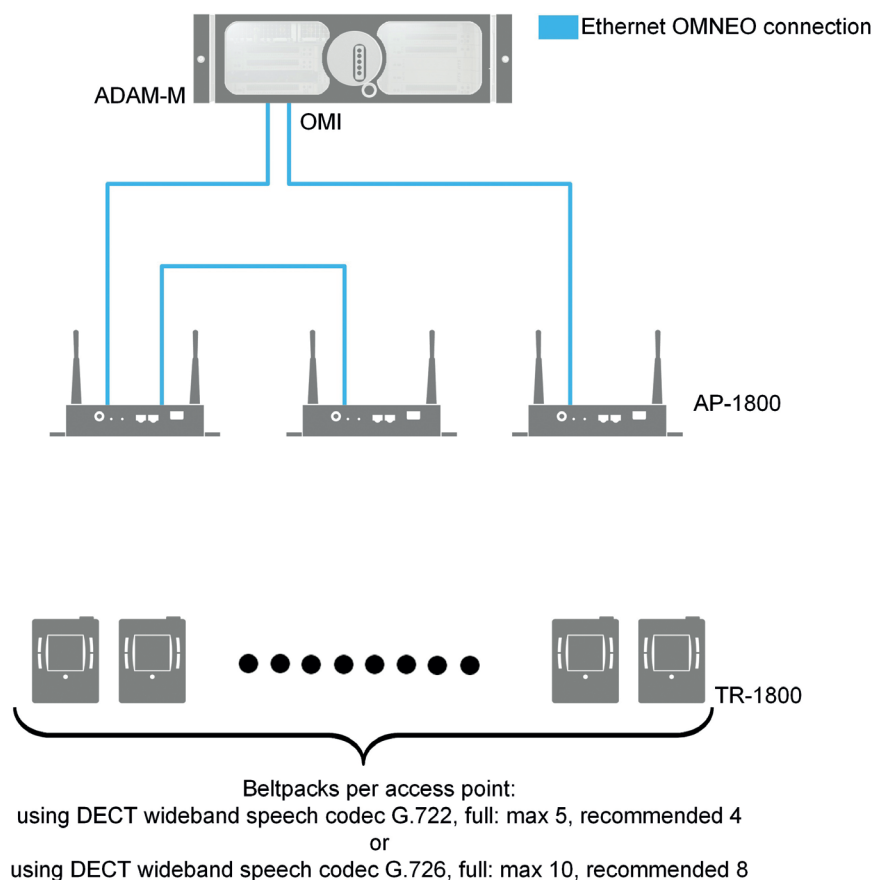## PROBLEM/SOLUTION

Many users require the features of a new integrated wireless intercom system, but do not want to replace existing equipment. The RTS ROAMEO system is designed to enhance existing investments by making it possible to connect a digital wireless intercom system to the existing matrix. The access points are connected to the ADAM or ADAM-M matrices through the use of an OMNEO Matrix Interface card (OMI). OMNEO is the Dante-compatible solution for high-quality, low-latency audio over IP. The OMI card can also be used for both wired keypanels and wireless beltpack connections to the matrix.

PRACTICAL EXAMPLES

Below are three use cases, each of which illustrates a different mechanism for connecting the access points to the matrix. The first is a simple use case that shows ad-hoc wiring. The second uses a ring topology to create basic redundancy. The third uses a sophisticated architecture for a highly redundant network.

ADAM-M

OMI

Ethernet OMNEO connection

AP-1800

TR-1800

Beltpacks per access point:
using DECT wideband speech codec G.722, full: max 5, recommended 4
or
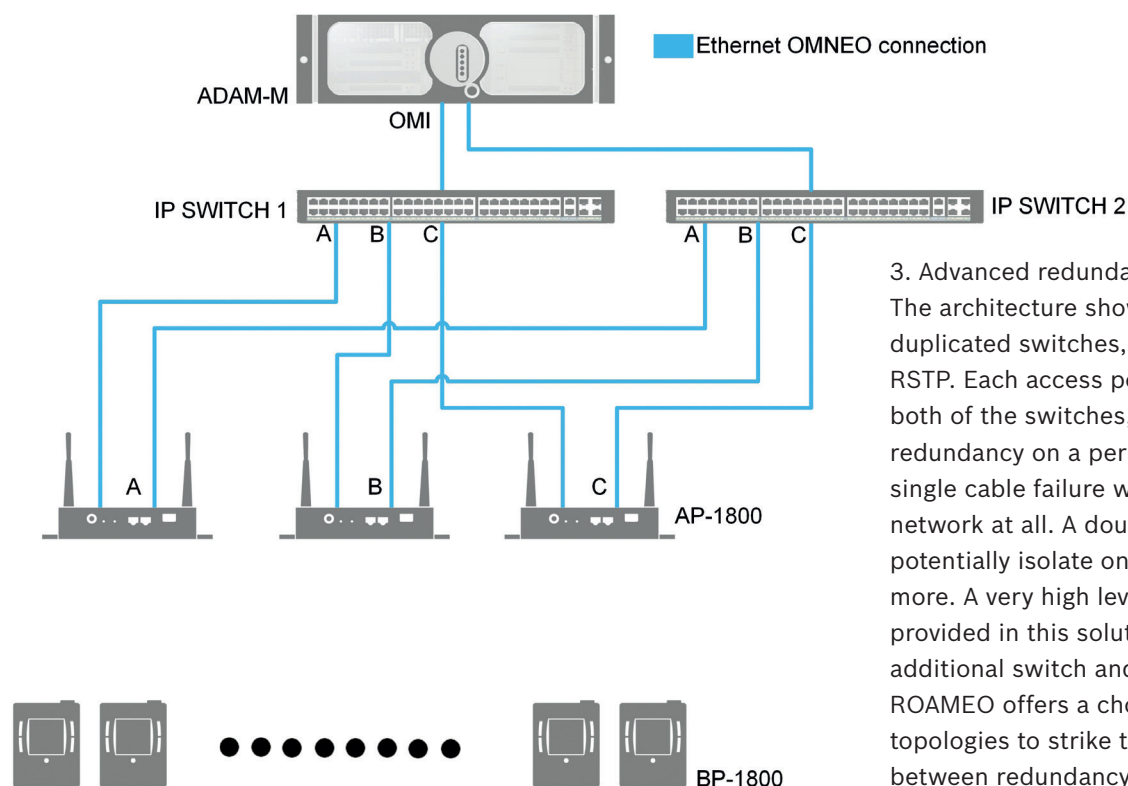using DECT wideband speech codec G.726, full: max 10, recommended 8

1. Ad-hoc wiring:
An access point can be connected directly to the matrix or to another connected access point, as shown in this example. Each access point has two RJ-45 ports, internally connected through a switch. This implies a ROAMEO system can be easily expanded by adding a new access point and, in most cases, simply connecting it to the nearest existing access point. A chain like this can have up to seven access points. Multiple chains can be created by using an Ethernet switch (not shown in this example).

ADAM-M
OMI

Ethernet OMNEO connection

IP SWITCH

AP-1800

BP-1800
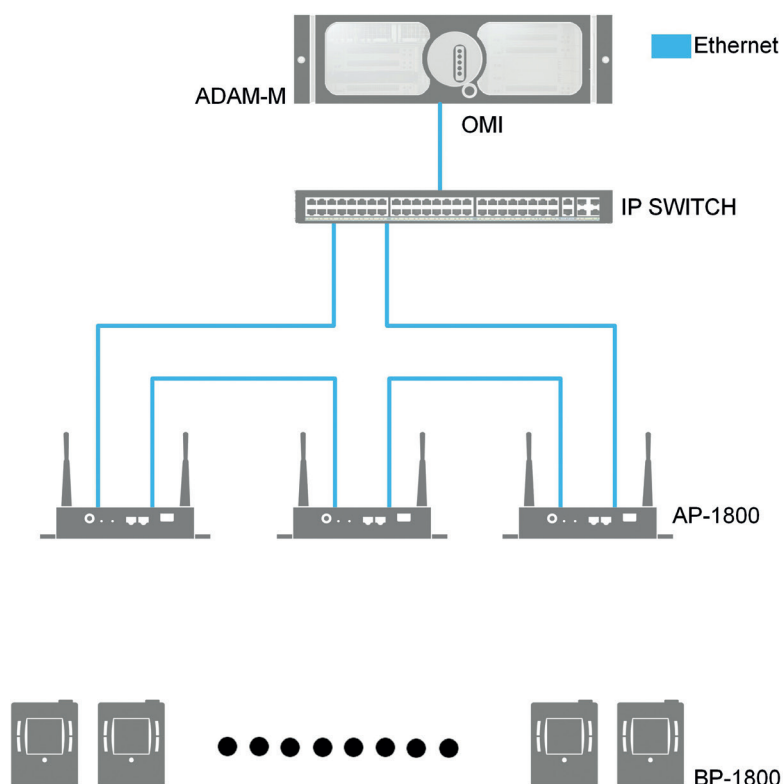
2. Basic redundancy:
Unlike standard Dante, OMNEO supports a feature called RSTP (Rapid Spanning Tree Protocol). In the example shown here, a level of basic redundancy is achieved by connecting access points in a ring topology. Each access point has two paths for the signal to get back to the switch. If one path fails, RSTP will automatically switch the signal to the alternate path, with a minimum of signal interruption. If the cables break in two locations, this topology can create an isolated "island" of one or several access points that no longer have a path back to the switch. The switch itself is also a single point of failure.

ADAM-M
OMI

Ethernet OMNEO connection

IP SWITCH 1   A B C   A B C   IP SWITCH 2

A   B   C

AP-1800

BP-1800

3. Advanced redundancy:
The architecture shown in this example has duplicated switches, both operating with RSTP. Each access point is connected to both of the switches, providing full redundancy on a per access point basis. A single cable failure will not affect the network at all. A double cable failure will potentially isolate one access point, but not more. A very high level of redundancy is provided in this solution, at the cost of an additional switch and more wiring. ROAMEO offers a choice of possible topologies to strike the required balance between redundancy and cost efficiency.

PRODUCT VIEW

AP-1800 uses local power. A PoE adapter kit is available separately. With a PoE adapter, it is possible to drive one AP-1800 from a PoE-enabled Ethernet switch.