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**Optimizing your aerial transmission network  
through high-performance cabling solutions**





# From advanced conductors...

## CONVENTIONAL CONDUCTORS WITH DESIGN TEMPERATURE UP TO 90°C

### ACSR: Aluminum Conductor Steel Reinforced

A conductor with a steel core and outer layers of pure aluminum; widely used, this conductor assures reliable, and durable performance.

*Nexans has provided this conductor to many operators in countries with long distances to cover, like in North America, South America and South-East Asia.*

### ACAR: Aluminum Conductor Aluminum Reinforced

A customized conductor with an aluminum alloy core and an outer layer of pure aluminum, it offers high ampacity (i.e. current rating).

However, its lower mechanical strength does not allow it to be unduly stretched.

*ACAR is much appreciated in parts of South America where there are no snow/ice or violent storms to cause dangerous sagging or line tension.*

### AAAC: All Aluminum Alloy Conductors

By replacing both steel core and outer layers of pure aluminum with aluminum alloys, this conductor is stronger than conventional ACSR, and more resistant to corrosion.

*Developed in Europe, and widely used in Belgium and France, these conductors are also deployed in many African countries, like Algeria, Congo and Niger.*

### ACCC: Aluminum Conductor Composite Core

An innovative lighter conductor with a core made of carbon fibers embedded in an epoxy matrix and outer layers made of annealed aluminum or aluminum alloy. This conductor has high tensile strength and low linear expansion with extremely low sag and no corrosion.

Its high breaking load allows longer spans between pylons. Particularly suited for river-crossing and to decrease the number of towers on long transmission lines.

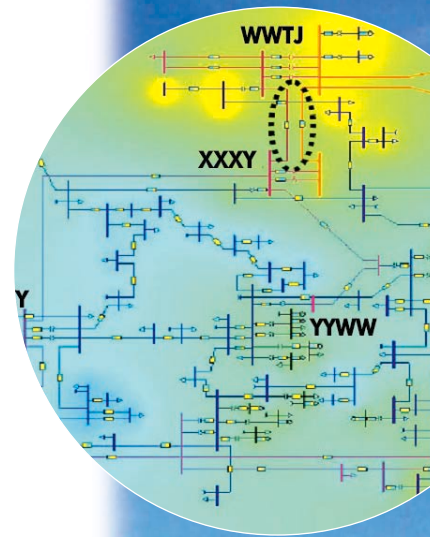
*A state-of-the-art conductor, this composite system allows for spans of up to 2.5 km, reducing the number of pylons in the landscape and significantly lowering the height (and cost) of towers when spanning broad rivers.*

### Nexans advanced Aero-Z® design

For all the foregoing conductors, in addition to the conventional design with round wires, Nexans can also supply a compact design with Z-shaped interlocking wires. It reduces drag (i.e. pressure on lines due to strong winds), minimizes "galloping," lowers corrosion and snow accretion, and raises ampacity by 10% in an equivalent diameter, or reduces Joule losses by 15% at the same ampacity. Aero-Z® has equivalent accessories, and can be installed in the same way and with the same equipment as conventional conductors.

*An African premiere: Nexans installed 132 kV AAAC Aero-Z conductors on a 264-km-long line between Nigeria and Niger. Combined with capacitive compensation, this allows a total increase of electrical capacity by 75% between the two countries. Nearly 900 km of the same conductor were also recently installed in Peru to resolve corrosion and corona loss issues.*

ACSR: Aluminum Conductor Steel Reinforced



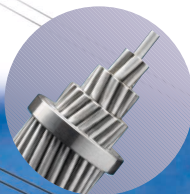
TACS: Thermal Aluminum Conductor Steel Reinforced

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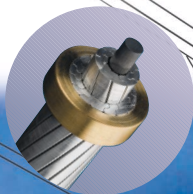
**ACAR: Aluminum  
Conductor Aluminum  
Reinforced**



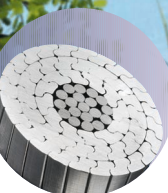
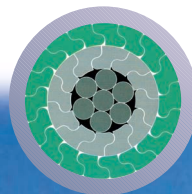
**AAAC: All Aluminum  
Alloy Conductors**



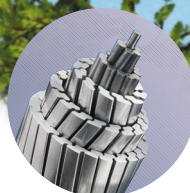
**ACCC: Aluminum  
Conductor  
Composite Core**



**Nexans advanced  
Aero-Z® design  
(conventional conductors)**



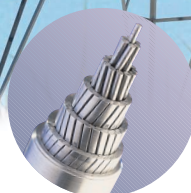
**CIR: Super Thermal  
Aluminum Conductor  
Invar Reinforced**



**ACSS: Aluminum  
Conductor Steel  
Supported**



**T-ACCC: Aluminum  
Conductor Composite  
Core**



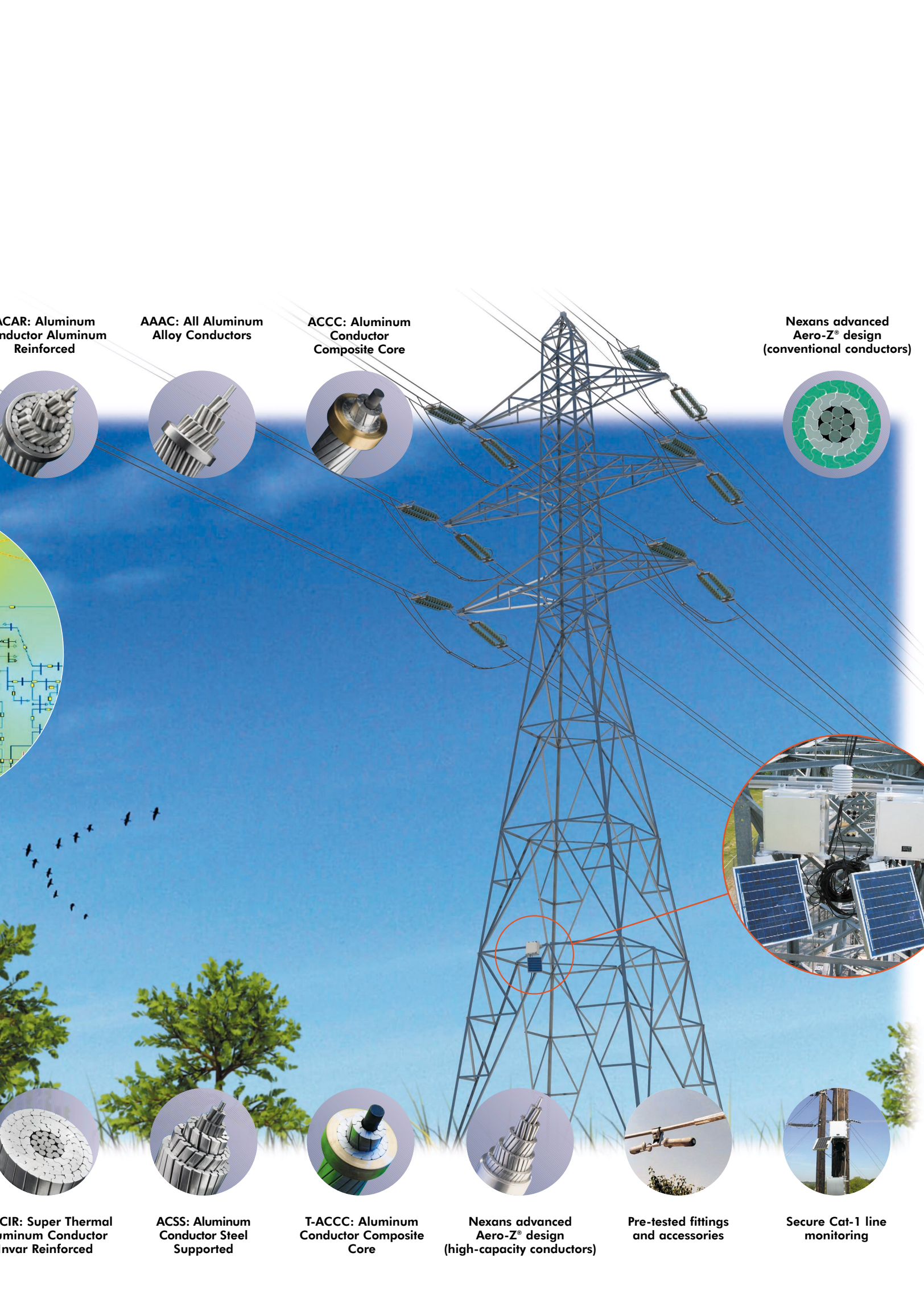
**Nexans advanced  
Aero-Z® design  
(high-capacity conductors)**



**Pre-tested fittings  
and accessories**



**Secure Cat-1 line  
monitoring**





### **Global expertise**

By paying close attention to the actual needs of Energy Transmission System Operators, Nexans has striven to improve network capacity, security, reliability, and cost-effectiveness. Our integrated overhead solutions add value to today's and tomorrow's energy networks.

### **Local presence**

Not only do we have a manufacturing, distribution and commercial presence around the world, we have long-established contacts with Transmission Operators, allowing us to better understand and tailor our aerial solutions to local needs. Also, we can provide global solutions with local or international contractors for installation whom we vigorously support, or via national and international energy consortiums.

### **Technical leadership**

Whether it is conductor types using new alloys and high-performance designs, or advanced services and software, we have continued to improve overhead technologies. Our combined expertise in underground and undersea cable technologies means that we can supply a complete energy network package and provide customized combinations of aerial, underground and submarine links to optimize the transmission and the distribution energy grids.

### **INNOVATION is at the core of our overhead lines**

Nexans has engineers and technicians working in energy transmission and distribution in both our research center in Lyon (France) and in our Metallurgy Center in Lens (France). They draw on the collective knowledge of the 600 researchers and engineers group wide. Our metallurgy experts are continuing to experiment with new, cheaper and more efficient alloys. Nexans constantly adds value to conductors in terms of technical know-how and electrical engineering, while supporting complete networks from design, line management, to fully integrated accessories.



With energy as the basis of its development, Nexans, the worldwide leader in the cable industry, offers an extensive range of cables and cabling systems. The Group is a global player in the infrastructure, industry building and Local Area Network markets. Nexans addresses a series of market segments: from energy, transport and telecom networks to shipbuilding, oil & gas, nuclear power, automotives, electronics, aeronautics, material handling and automation.

With an industrial presence in more than 30 countries and commercial activities worldwide, Nexans employs 22,000 people and had sales in 2007 of 7.4 billion euros. Nexans is listed on Euronext Paris, compartment A.