**Digital Beamforming Network**

**Potential applications**

Large antennas
Ground and onboard antennas including radiating elements

**Summary of the invention**

The invention concerns a large antenna transmitting and/or receiving system with a beamforming network. The signals coming from and/or arriving at each of the elements are weighted by excitation coefficients that are numerically determined by a computer.

**Technological advantages**

- **Controlling system characteristics**
  - Real-time control of each of the radiating elements of the antenna and hence of its far-field radiation diagram.
  - Real-time control of the network's illumination law.

- **Compensation for network deformation**
  - The real-time control of the system characteristics makes it possible to compensate for the deterioration in performance in case of distortion or failure of one or more network elements.
  - Enables the use of flexible structures for supporting the network antenna.

**Commercial benefits**

- **Lower costs**
  - The system is less cumbersome to implement since it is possible to compensate for network deformation.
  - Removes many mechanical constraints and allows the use of flexible structures.

**TRL : ?**

*CNES/SATIMO patented invention, available under licence*