

# Application BASTRI

## Fiches Equipes

### AYIN (SR0491MR)

Models of spatio-temporal structure for high-resolution image processing  
ARIANA (SR0155IR) □ AYIN

**Statut:** Terminée

**Responsable :** Josiane Zerubia

**Mots-clés de "A - Thèmes de recherche en Sciences du numérique - 2023" :** *Aucun mot-clé.*

**Mots-clés de "B - Autres sciences et domaines d'application - 2023" :**  
*Aucun mot-clé.*

**Domaine :** Perception, Cognition, Interaction

**Thème :** Vision, perception et interprétation multimedia

**Période :** 01/01/2012 -> 30/06/2016

**Dates d'évaluation :**

**Etablissement(s) de rattachement :** <sans>

**Laboratoire(s) partenaire(s) :** <sans UMR>

**CRI :** Centre Inria d'Université Côte d'Azur

**Localisation :** Centre Inria d'Université Côte d'Azur

**Code structure Inria :** 041004-1

**Numéro RNSR :** 201221222V

**N° de structure Inria:** SR0491MR

### Présentation

The Ayin team is devoted to the modeling of spatio-temporal structures, for use in the analysis of high-resolution image data, with particular application to images arising in remote sensing, broadly interpreted, and skin care. The latest and upcoming generations of imaging sensors, for example, in remote sensing and medicine, result in large volumes of heterogeneous data with high spatial, spectral, and temporal resolution. High resolution imagery (this may refer to spatial, spectral, or temporal resolutions) is a rich source of information about the imaged scene, information that is unavailable in lower resolution data. In particular, spatial and spatio-temporal structures abound, and frequently constitute the information of greatest interest in practice. As a result, such imagery is vital to advances in a range of applications (urban monitoring, precision agriculture, skin disease diagnosis, etc.). The high resolution and high volume of the imagery presents new challenges, however, that must be overcome if the potential of the data is to be realized. Extracting the available information requires the development of new modeling techniques adapted to the nature and profusion of structures, and the design of corresponding algorithms, which must in turn be implemented in a time- and space-efficient way if the techniques are to be made operational.

### Axes de recherche

The overall scientific objective of the Ayin team is precisely to advance the state of theory and practice in this area by the development of such modeling techniques and the design of such algorithms. We make use of a variety of methodologies in order to achieve this goal, taking a broadly Bayesian point of view. This point of view suggests dividing the modeling task into two parts: modeling of the scene, ie describing the scenes to be expected in any given application; and modeling of the image, ie describing the images to be expected from any given scene. Ayin focuses on spatio-, spatio-temporal, and spectral structure, leading to the modeling of geometrical properties on the one hand, and large, coherent structures in images and image sequences on the other. The new models also require new algorithms, for dealing with the nuisance parameters they contain, and for extracting the desired information. This forms a third major component of Ayin's research. The models and algorithms are developed in parallel with their application to information extraction from very high resolution images, in particular data arising in remote sensing and skin care.

### Relations industrielles et internationales

#### Contact

- **Responsable :** Josiane Zerubia
- **Tél :** + .33. 4. 9.2 .38. 7.8 .65
- **Secrétariat Tél :** + .33. 4. 9.2 .38. 7.8 .57

#### En savoir plus

- Site sur [inria.fr](http://inria.fr)
- Derniers Rapports d'Activité : **2015 , 2016**

#### Documents sur la structure

- **Intranet**
- **Privés**

#### Décisions

- **8379** (05/01/2012) : création
- **8987** (02/01/2013) : prolongation
- **9765** (10/12/2013) : prolongation
- **10569** (11/12/2014) : prolongation

#### Localisation

- **Adresse postale :** Centre Inria d'Université Côte d'Azur 2004 Route des Lucioles - BP 93 06902 Sophia Antipolis cedex France
- **Coordonnées GPS :** 43.616, 7.068

