

- coordination of a common European Earth Observation Strategy through partnership between ESA, the European Commission, Eumetsat and other European entities, and coordination of national programmes
- coordination and cooperation on a global scale through strategic cooperation with, for example, NASA and NASDA, and active coordination, for example, in the frame of the Committee on Earth Observation Satellites (CEOS)
- a partnership approach for applications missions through partnership mechanisms and co-funding schemes with other public bodies and industry
- new modes of dialogue with industry, to stimulate a user-driven, cost-effective and entrepreneurial European industry that is competitive in global markets
- higher effectiveness of the Agency and its delegate bodies in the decision-making process and in implementation
- cheaper, more focused missions.

### **Programmatic implementation of the Strategy**

Much thought has been given to the best manner in which to implement the new 'Living Planet' programme. The intention has been to incorporate the best approaches which have worked successfully elsewhere, and to provide cost-efficient and flexible procedures that can be implemented quickly. An overview of the programme's main characteristics is provided in Table 1.

The new Strategy recommends and explains the virtue of a programmatic approach consisting of two main elements:

- an optional Envelope Programme, comprising an Earth Explorer Component and a Development and Exploitation Component including the transition to Earth Watch; and
- a series of optional programmes for individual Earth Watch missions.

The Earth Observation Envelope Programme has a two-fold interest: for the European researchers who want to improve knowledge about the Earth or the precision and quality of observation; and for the applications of a public-service or commercial type, which aim at providing a service on a permanent basis for the customer. It is therefore necessary to satisfy these two types of use whilst still ensuring the link and the continuity between research projects and operational programmes.

The Envelope Programme features an implementation within a programmatic frame with the key characteristics that have made the Scientific Programme (which is a mandatory activity of the Agency) a success, namely continuity of activities, independent definition of requirements by the scientific community, a quick decision process and management flexibility. At the same time, it includes the advantage of an Optional Programme, i.e. the flexibility for Member States to decide on their contribution scale based on national aspirations and past investments, present assets, political, scientific, economic and industrial interests.

Table 1. The 'Living Planet' Programme	
What is different?	What is new?
<ul style="list-style-type: none"> <li>• Offers a long-term view and continuity</li> <li>• Responds to the user needs</li> <li>• Contains more focussed and cheaper missions (50%)</li> <li>• Is 25% cheaper than the present set of missions and hence adds value for less money</li> <li>• Delegates tasks and management to Industry or other entities</li> <li>• Reinforces industrial competitiveness</li> <li>• Puts more emphasis on international cooperation and technological preparation</li> <li>• Secures exploitation of missions</li> <li>• Reduces complexity and administration</li> </ul>	<ul style="list-style-type: none"> <li>• Financial frame: - envelope for science (Earth Explorer), development and exploitation - optional for applications missions (Earth Watch)</li> <li>• Based on partnership with Industry for applications missions</li> <li>• Serves as a reference programme for Europe</li> <li>• Assumes full coordination, harmonisation and integration with other European national programmes</li> <li>• Supports Europe's commitments to international treaties</li> <li>• Helps transition to operational entities</li> <li>• Helps to develop the market for applications</li> </ul>

Accordingly, the EOEP is proposed as an Optional Programme, with multiple reference missions (in the case of the Earth Explorer component) and a large spread of activities (in the case of the Development and Exploitation component). Through such an approach, each Participant is given a real voice in the ESA Programme Board for Earth Observation (PB-EO), corresponding to their interests and priorities, whilst at the same time the solidarity between Participants with common strategic objectives in Earth Observation will consolidate the role and position of Europe in this sector. A strong incentive to be cost-efficient is built in for Participants, the Executive, the scientific world and industry, as all savings are reinvested in the programme for new initiatives proposed by all players.

At the same time, the existence of a long-term-planning Earth Observation programme with an identified scope per phase becomes a reference for national initiatives, as the latter can take into account and complement the overall ESA programme, with a continuous dialogue between interested parties.

Industry gains very much with the envelope

approach as it can plan against the evolving programme as it develops and it can target prospects in the future to build its own skills in a strategic manner.

The 'Living Planet' programme will use also the more traditional optional approach, which is best suited for implementation of individual Earth Watch missions. The Phase-C/D and E implementation will be established on the basis of individual programme proposals. Proposals will include agreements with partners and will be governed by separate Declarations with separate subscription scales and geographical returns for the Participating States. The subscriptions to an individual programme are expected to reflect the national interest in the programme and the proposed structure of the external industrial partnerships that are set up.

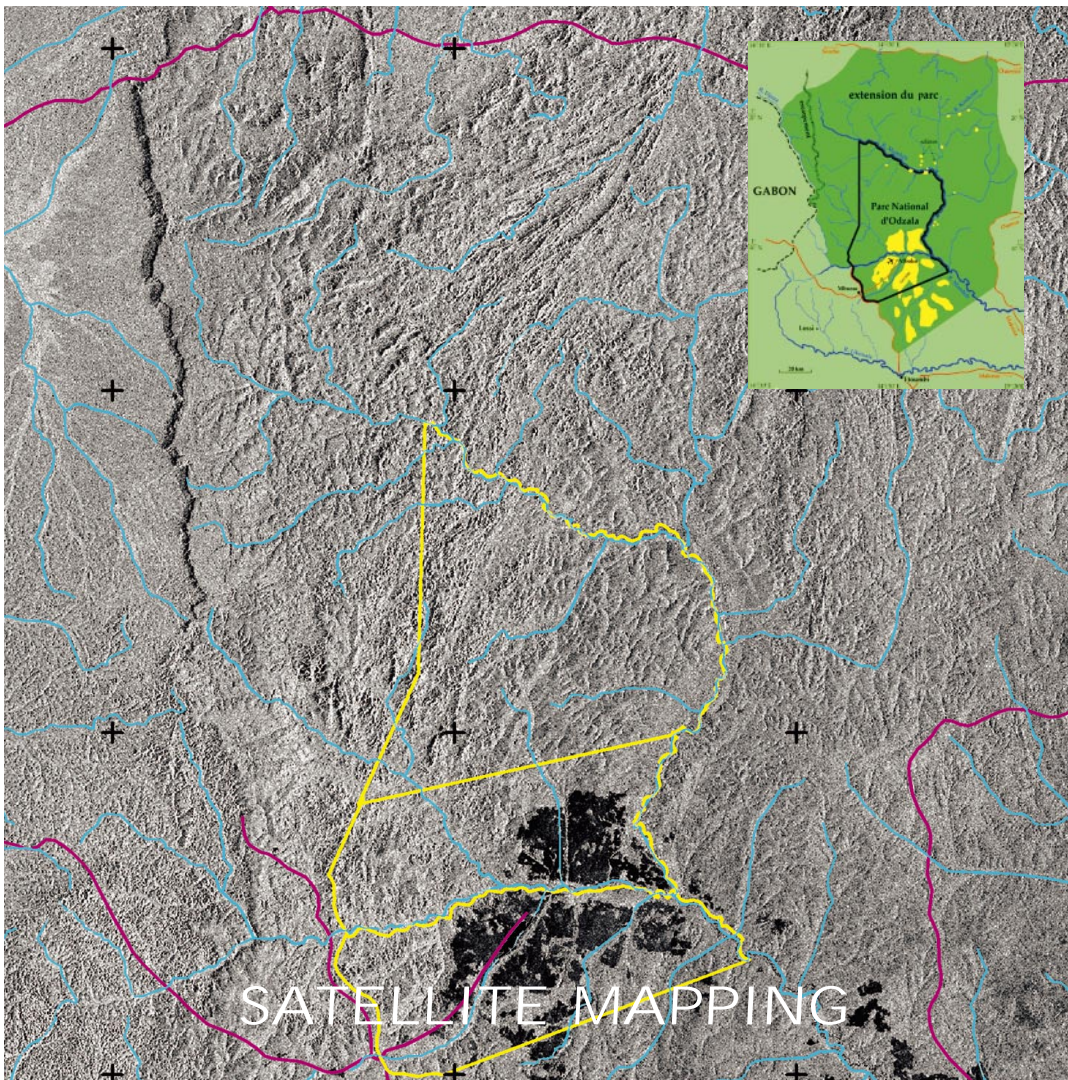
### The Earth Observation Envelope Programme

The key features of the Earth Observation Envelope Programme can be summarised as follows:

(a) It is an optional Envelope Programme, providing at one and the same time increased flexibility and responsiveness and the

Table 2. Earth Observation Envelope Programme	
Earth Explorer Component	Development and Exploitation Component
<ul style="list-style-type: none"> <li>— Earth Explorer Definition</li> <li>— Earth Explorer Development</li> <li>— Earth Explorer Launch &amp; Operations</li> </ul>	<ul style="list-style-type: none"> <li>— Earth Observation Preparatory Activities</li> <li>— Earth Watch Mission Definition</li> <li>— Instrument Pre-Development</li> <li>— Mission Exploitation/Market Development</li> </ul>





necessary stability/continuity. It is to be implemented in five-year programmatic phases, according to Annex III of the Convention. The first phase will cover the period 1999 – 2003 and will be a build-up phase. This Envelope Programme approach includes the following main advantages for Participating States:

- stable financial planning (programme risks and associated costs taken up within envelope)
- flexibility, e.g. the possibility for extension of satellite operations without requesting a new supplementary budget
- inherent incentives for cost savings within the individual programme elements
- continuity, e.g. for long-term archiving of ESA mission data
- a long-term plan against which industry can plan strategically
- ease of setting up cooperative missions with other agencies.

(b) It comprised two main components (Table 2), namely:

- The **Earth Explorer Component**, which includes the definition, development, launch

and operations (equivalent to Phases-B, C/D and E) of Earth Explorer missions.

- The **Development and Exploitation Component**, which includes:

- Earth Explorer preparatory activities (pre-Phase-A and Phase-A) and Earth Watch preparatory activities (equivalent to pre-Phase-A and Phase-A)
- Earth Watch type mission definition (up to preparation of dedicated programme proposals for optional Earth Watch type programmes, i.e. Phase-C/D and E)
- Instrument Pre-development (for identified/ agreed user-driven candidates for Earth Explorer and Earth Watch type missions), and
- Mission Exploitation (including already approved missions)/ Market Development.

(c) It comprises two types of Earth Explorer missions, namely:

- Core missions (major missions led by ESA to cover primary research objectives)
- Opportunity missions (smaller missions providing a quick reaction capability).