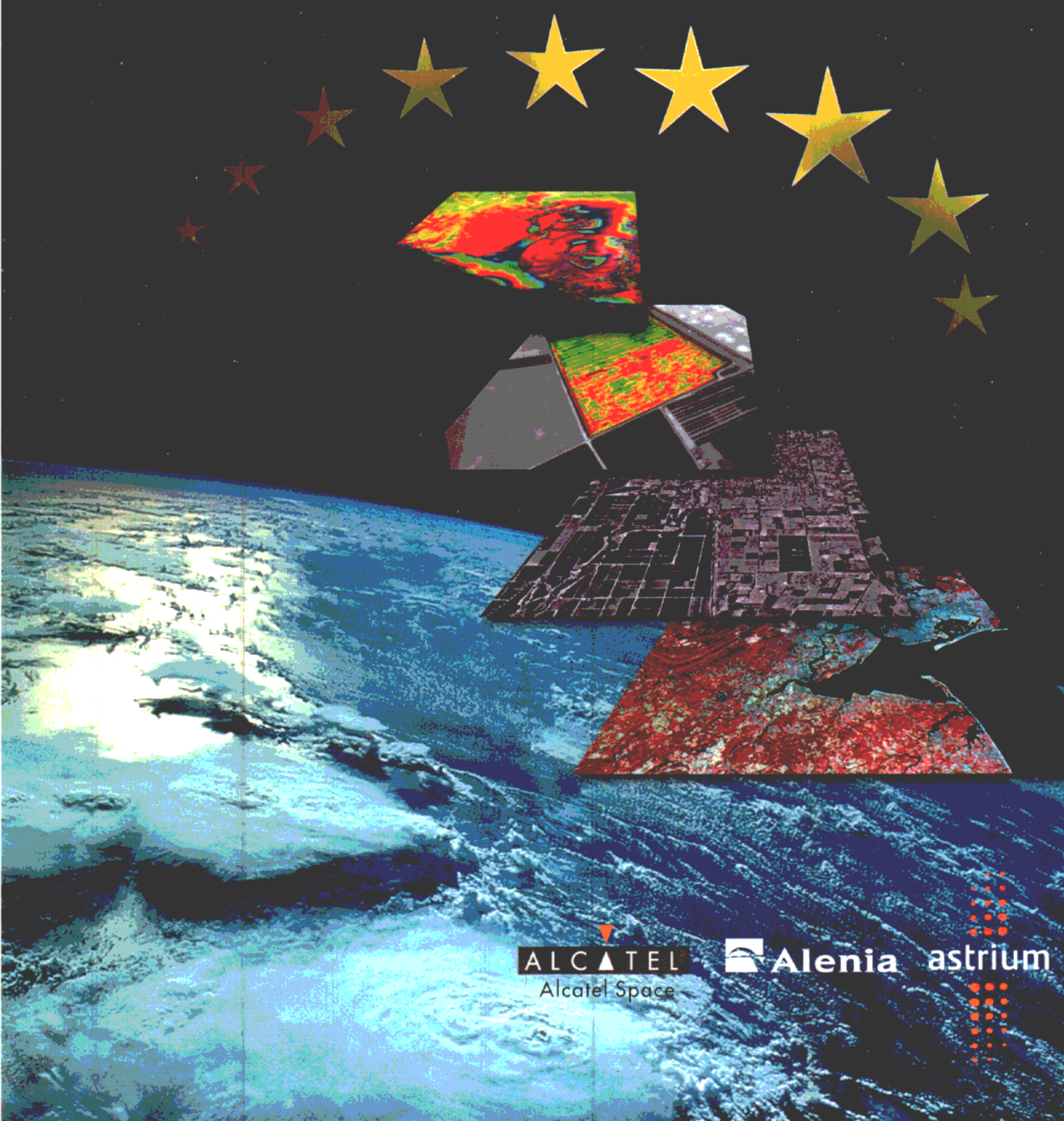


# ERSIS

European Remote Sensing  
Information Service



**ALCATEL**  
Alcatel Space

**Alenia astrium**



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*The ERSIS concept study has been performed within the framework of a contract awarded by the European Space Agency (ESA) under ref : 13592/99/NL/SF*

# A EUROPEAN REMOTE SENSING INFORMATION SERVICE (ERSIS)

## BACKGROUND

Global demand for geo-information is increasing but to date growth has been slow with only limited availability of services from pre operational space and airborne missions. Better use of existing resources and infrastructure and the introduction of new products and services will help to develop the market but real demand will grow only when a global space based operational service is available. Unless Europe acts quickly the opportunity to be a major player in this global market may well be lost to overseas competition, particularly in the US. It is the objective of the ERSIS concept to demonstrate that the needs of both strategic and commercial customers can be satisfied and that each play a part in establishing a long term and self-sustaining geo-information service.

## A COMMON EUROPEAN GOAL

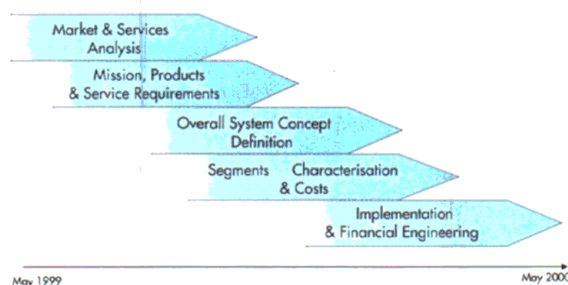
The successful launch and commercial / scientific exploitation of several European Earth observation satellites within the past 15 years has given Europe a unique and extremely strong position in the field of satellite based remote sensing. Based on this heritage, Europe has the capability to implement both space and service segments, and to develop commercial activities based on geo-information.

The definition of a European end to end information service concept will help to identify a way forward in terms of harmonisation of European service initiatives currently planned or underway. It will also assist ESA to identify the development to be undertaken in the frame of the Earth Watch component of the Living Planet Programme to bring European industry into the best position to enter the commercial Earth Observation market.

## THE ERSIS STUDY

The ERSIS (European Remote Sensing Information Service) study, initiated by ESA in May 1999, represents the first step in achieving a harmonised European approach to the establishment of co-ordinated, and ultimately self sustainable, end to end information services to capture and develop the growing geo-information market.

The objective of the study is the definition of an end to end information Service concept, answering present and emerging user operational needs as justified by market analyses. The principal output of the 12 month study is an implementation plan demonstrating the validity of the concept, including: a deployment plan, an associated business case, and a funding scenario by institutional and private investors. The study was broken down into 5 major work packages as shown below :

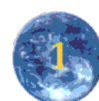


The ERSIS study has been undertaken by a consortium of the 5 major space companies in Europe (Alenia Spazio, Alcatel Space Industries, Dornier Satellitensystem, Matra Marconi Space France and Matra Marconi Space UK) supported by downstream value adding industry.

ALENIA SPAZIO	DSS	MMS-F	ASPI	MMS-UK
Deployment, Business Case	Market Analysis	System Requirements	Concept Architect	Segment Definition, Costs

Company	Nation	Company	Nation
1 ARCS	A	14 ISTAR	F
2 TRASYS	B	15 Enso Forest	FIN
3 VITO	B	16 Novostoy	FIN
4 Atlantis Scientific	CND	17 Planetek Italia	I
5 Explorer Consulting	CND	18 EURIMAGE	I
6 SAR Corp	CND	19 TSS	N
7 Kampsax	D	20 ARGOSS	NL
8 GAF	D	21 SSC	S
9 INDRA	E	22 ESYS	UK
10 MSI	F	23 NPA	UK
11 IGN	F	24 NRSC	UK
12 SCOT	F	25 EOS	UK
13 SPOT IMAGE	F	26 SOS	UK
		27 MRC	UK

Note : DSS, MMS-F and MMS-UK have recently been merged into ASTRIUM



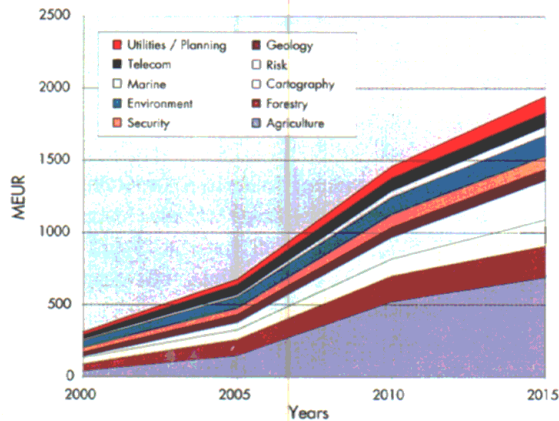
# THE ERSIS MARKET

## MARKET ANALYSIS

The ERSIS market analysis has brought together the combined expertise of many of the leading European and Canadian service providers in agriculture, forestry, cartography, risk management, environment, geology, security, utilities / planning, telecommunications, and marine / coastal applications, to determine the products and services to satisfy the current and future needs of European strategic and global commercial customers.

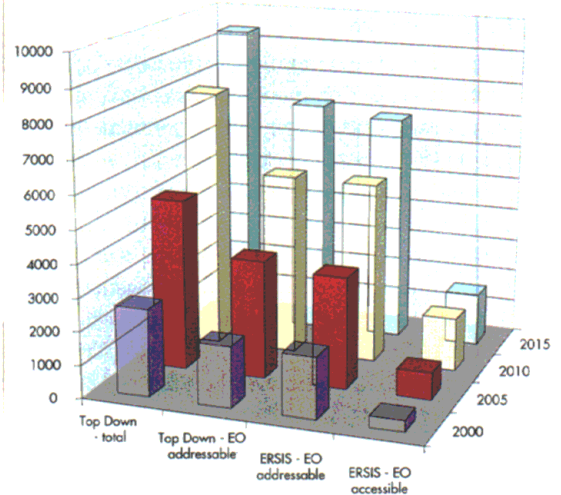
## ERSIS ACCESSIBLE MARKET

The potential addressable market for EO services is estimated to be 1840 MEUR, growing to 7000 MEUR in 2015.



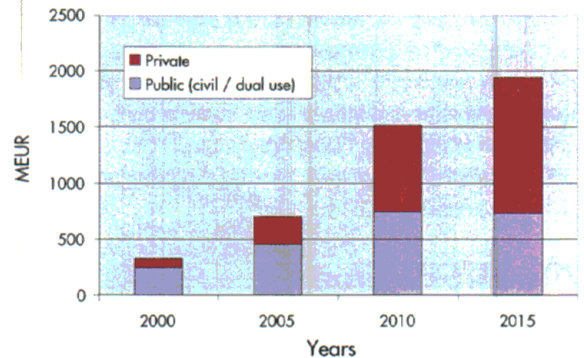
The accessible market has been evaluated at 300 MEUR for the year 2000, taking into account factors such as competition from non-space sources and customer uptake, increasing to roughly 1900 MEUR in 2015 with an average annual growth rate of 5 – 10 per annum. A major pre-requisite for capturing new markets is the provision of products and services based on data of 'new quality' (e.g. high resolution SAR, superspectral). Market growth is dominated by agriculture, accounting for up to 30% of the EO accessible market, related to the emergence of precision farming activities.

These market figures have been validated using recent market studies from Frost-Sullivan, KPMG and Merrill-Lynch. Comparison with these studies reveals that the ERSIS assessment of the EO addressable market is slightly lower and reflects a conservative approach.



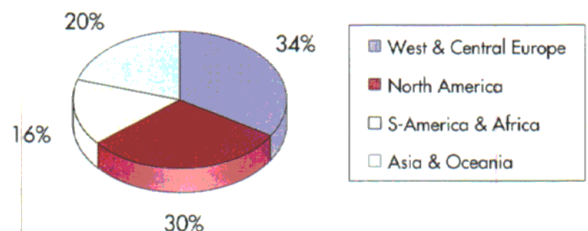
## PUBLIC / PRIVATE MARKETSHARE

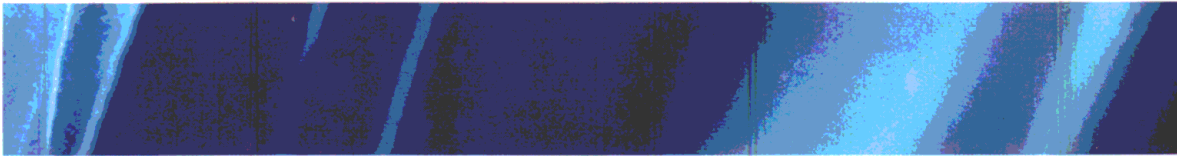
Market growth is driven by the demand from the private sector, private / commercial customers will account for almost 60% in 2015. Public customers will remain major users of EO derived products and services but their market share will decline from an estimated 70% in 2000 to 40% in 2015.



## CONTINENTAL DISTRIBUTION OF MARKETS

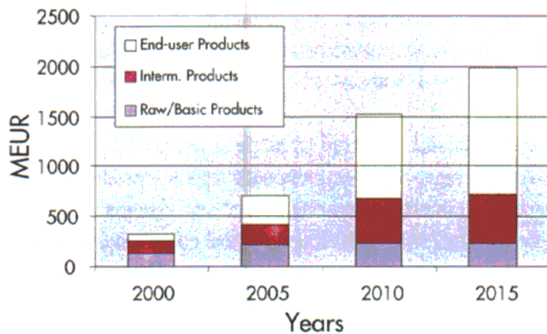
The key regions for market development are Europe and North America, which will account for more than 60% of the global EO accessible market in 2015.





## ERSIS PRODUCTS

Sustainable market growth can only be achieved by sales of intermediate and final information products and not by sales of raw and basic data. By 2010, final information products will account for more than 50% of the EO accessible market.



## BETTER QUALITY DATA

These new information products will require better quality EO data than is presently available, i.e. :

- higher resolution (optical & radar),
- enhanced spectral capabilities,
- multi-frequency + multi-polarisation radar,
- adequate coverage / availability for operational services.

## TOP 20 PRODUCTS

Careful evaluation of customer needs has led to the selection of 20 products to form the core of the customer offer :

- raw / basic products : 1m SAR X band, 1m optical PAN, 10m superspectral, 5m multispectral, 8m SAR L band,
- intermediate products : Land cover /use, DEM, orthoimages (scale 1:10,000 – 1:25,000),
- final products : crop biophysical parameters, homogeneity / variability / vigour, nitrogen applications, crop damage assessment (agriculture), forest type regional, forest access, forest biomass, risk assessment and damage for floods, fire, etc., oil spill maps and space maps.

## KEY SERVICE REQUIREMENTS

Customer service requirements must be satisfied as well as product needs if the target market volumes are to be achieved. Key service features will be a high level of customer support including :

- proximity to the customer, both in geographic and thematic terms, through partnerships with established market owners,
- guaranteed service & product availability and continuity,
- customer product certification and standards,
- confidentiality (commercial and security),
- maintenance of products and services in line with changing customer needs.

## ENVIRONMENT, SECURITY AND DUAL USE

ERSIS product and service profiles have been designed to cover most of the potential needs of the European Commission's initiative on global monitoring for environment and security (GMES). Furthermore, dual use for defence is inherent to the ERSIS concept, confidentiality can be provided as required. General interest in various products has been expressed by several national defence bodies but, in the absence of specific requirements, the market assessment reflects only a small market share for defence. However, the proposed ERSIS dual use capabilities, in terms of products and services, will satisfy a significant proportion of European strategic information needs for defence and represent an opportunity for generating additional market and revenues.

## THREATS AND OPPORTUNITIES

The robustness of any market analysis is ultimately tested by how it stands up to changes in the business environment. Factors which might reduce the predicted market volume include :

- maturity of products,
- missing the opportunity of being "first to market" due to major EO programme delays,
- increased levels of US competition,
- higher cost efficiency of competing technologies (e.g. ground based sensors).

Major market opportunities which might arise are :

- global monitoring for environment and security (GMES),
- security and defence (currently assessed at 10% of accessible market in 2015),
- new markets (e.g. multimedia).

The ERSIS team are confident that the opportunities outweigh the threats.

# CAPTURING THE MARKET

## GENERAL APPROACH

Improvement of existing products and services will not satisfy the projected market needs, fully 80 % of the potential market identified by ERSIS is reliant on new products calling for the development of new space and service segments.

## PRIORITY APPLICATIONS & PRODUCTS

The potential market for EO services is broad and it is not sensible to attempt to address all sectors with equal priority as this would not provide the best return on development costs. Therefore, the first step is to prioritise the applications to be targeted and the products to be developed, to provide the appropriate balance of services to satisfy the needs of both public and private sector users and provide an adequate return on investment.

This has resulted in priority being placed on applications with high commercial value (agriculture - precision farming and forestry), on applications with high strategic and public value (defence, risk management, environment) and on applications with mature markets (cartography, telecommunications). Applications and products have been excluded that have modest commercial value or no significant public value and either require specific space hardware or product developments, e.g. geology and marine products that require specific hyperspectral and ocean colour sensors. In addition, the environment application field is very broad, and only those products for which the data requirements can be fulfilled by sensors common to several other applications have been addressed.

## NEW OBSERVATION CAPABILITIES

Not only are new products required but availability and coverage need to be improved beyond that presently available. Observation requirements have been synthesised in 4 homogeneous classes characterised by the combination of service related requirements, revisit and coverage, and product related requirements, namely the resolution and the sensors needed. As can be seen from the table below, a particular application is generally characterised by several classes of EO data requirements.

The first two classes of requirements are characterised by a high spatial resolution but low revisit (a year or less). The majority of products corresponding to these classes can be generated using multispectral and SAR data. The sensor data may either be combined (e.g. for detailed land cover) or used independently, in which case the data from one sensor type may be preferred (e.g. optical for urban DEM,

L band SAR for forest biomass). The second class is distinguished from the first by larger area coverage and lower resolution requirements. Whereas both sets of requirements could potentially be served by a single X band SAR sensor type, different resolution optical sensors would be needed. The third class is characterised by the urgency with which data must be acquired from request (e.g. damage maps). Several SAR sensors would be required to guarantee timely data availability whereas optical sensors can be employed when available. Finally, the fourth class is characterised by weekly revisit of many small and scattered areas that demand a wide swath (wide coverage) and products with high information content (e.g. biophysical information for precision farming), for which superspectral, SAR X and L sensors are complementary.

Recent European research has shown that the spectral reflectance properties of vegetation can be reliably used to obtain biophysical information (leaf area index, chlorophyll content) which is useful in many agricultural applications and especially crop management. The characteristics of the vegetation spectrum (chlorophyll absorption bands, red edge and near infrared plateau) are such that the optimum can be obtained by observation in 10 to 12 bands in the visible and near infrared. No advantage is gained from additional bands.

For SAR band, although X and C have similar thematic performance (cartography, marine applications, vegetation), X band is preferred for several reasons. Firstly, the high resolution required by many applications is easier to implement at X band. In addition, observation in conjunction with L band is planned for several applications (those related to land cover and vegetation monitoring in particular) and there is a larger difference of wavelengths between X and L than between C and L bands, improving the information obtained.

L band is preferred to C band for vegetation monitoring because its longer wavelength provides better performance for vegetation monitoring and for interferometric applications.

Class	Coverage & Revisit	Resolution	Sensors		Target Applications							
					A	C	D	F	T	R	E	
1	Small areas Yearly	1 m	PAN + Multispectral	SAR X								
2	Small to large areas Yearly	2.5 - 10 m	PAN + Multispectral	SAR X / L								
3	Small areas Short time notice Frequency revisit (Daily)	1 to 50 m		SAR X / L								
4	Many small areas Weekly High information content	10 - 20 m	Super- spectral	SAR X / L								

A : Agriculture, C : Cartography, D : Defence, F : Forestry, T : Telecommunications, ; R : Risks, E : Environment





## SENSOR SELECTION

Five types of sensors have been identified to fulfil the complete set of priority application requirements.

1 m optical	1 satellite
2.5 m optical	1 or 2 satellite
Superspectral	2 satellites
X band	1 to 4 satellites
L band	1 satellite

Additional sensors (e.g. moderate and low resolution, hyperspectral) are also necessary, as primary or secondary data, to generate some ERSIS products. First generation sensors are currently being flown in Europe (e.g. Vegetation, MERIS). The development of future sensors of this type, with a limited direct market, is considered to be beyond the scope of the commercial approach of ERSIS. Availability of these sensors is expected to be provided in parallel to ERSIS.

European development of all 5 sensors types has been baselined, despite several alternative sources of European 1 m optical data existing in the US. This to support not only European strategic but also economic independence. The 2.5-5 m optical data market, in which Europe is the lead supplier, is significant for coverage of large regions and continuity of service must be ensured beyond Spot 5. Market analyses suggest that this could be provided by a constellation of two small satellites.

Superspectral data is the key to the largest identified market sector, precision agriculture, and has potential strategic value for monitoring crops outside Europe.

Two superspectral satellites are required to ensure a 10 day revisit demanded by agriculture information products.

X band SAR data is of commercial and public interest for Europe and is key to accessing a wide market spanning many applications. Europe has the potential be first to market, whereas similar projects are still pending in the USA.

Constellation size is driven by the risk management and security applications revisit requirement .

Number of X-band SAR	Mean Revisit
2 Satellites	13 to 24 h
3 Satellites	9 to 16 h
4 Satellites	6 to 12 h

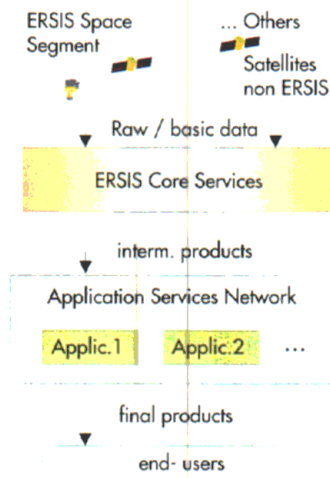
L band SAR represents a similar opportunity: it is key to accessing a wide, multi-applications market, has no real competitors outside Europe and can be used in conjunction with X band to provide quasi simultaneous observations. A single L band satellite is sufficient for the market and for ensuring the 10 day revisit called for by most applications.

## PRODUCT DEVELOPMENT

A major factor in creating and capturing the market is product development. Not only do new products need to be developed but existing ones must be improved. Product improvement includes standardisation and certification of the generation process, as well as greater automation of processes to reduce costs. Confidence in the feasibility of the majority of new products considered in the ERSIS analysis is based on R & D that has been conducted in Europe over the past few years. However, a significant amount of R&D remains to be undertaken as well as in the operationalisation of the product generation chains.

# ERSIS ARCHITECTURE CONCEPT

## ERSIS CONCEPT



The ERSIS concept is modular and distributed, enabling a gradual deployment in response to market demands. The services implementation reflects a separation between generic/core and application specific services. Generic (basic and intermediate) products can be used by several applications and potentially can be mass produced. The generic or **ERSIS Core Service (ECS)** concept provides an opportunity to achieve product standardisation, reduce the costs of production and R&D and offer an improved service to customers through economies of scale.

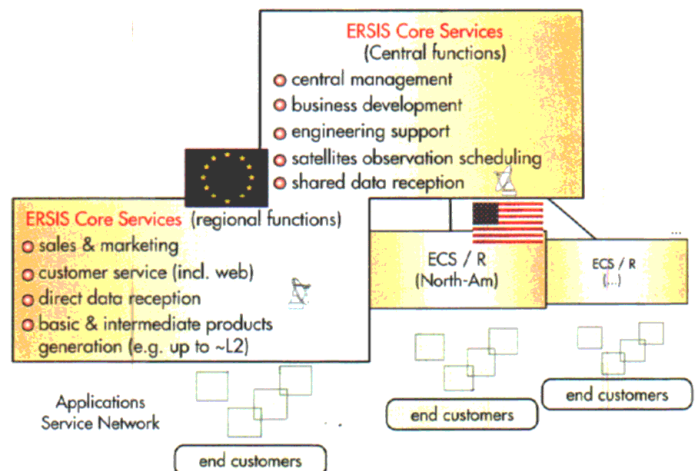
In contrast, application specific services must respond to the specific needs of customers. Final products require specific processing algorithms, and data integration. The customer interface must be appropriate to the application and products provided and offer adequate availability of service. Applications will benefit from a federation of service providers in order to co-ordinate product development and service provision per application field. A coordinated set of service providers will form a value added Application Services Network (ASN).

## EUROPEAN CORE SERVICES CONCEPT

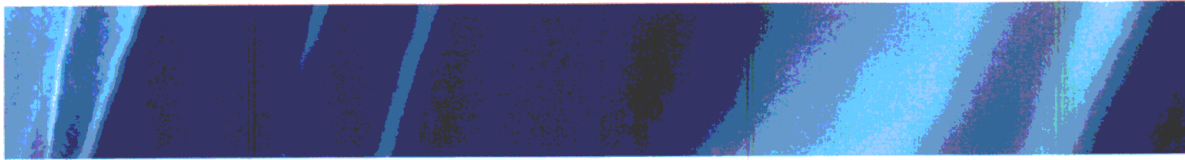
The ERSIS core service component (ECS) of the concept is further divided into a centralised ECS component (ECS/C) and one or several regional (decentralised) ECS components (ECS/R).

Strategic management and some selected engineering functions are centralised (ECS/C) to ensure efficient use of resources and global coherence of services. The ECS/C functions include: observation scheduling and requests to other non ERSIS satellites, data reception and calibration, maintenance of product standards and quality assurance.

Routine and decentralised operational functions such as marketing and sales, regional direct data reception, production and archiving of basic and intermediate products are distributed regionally (ECS/R) to be close to the customers. The ERSIS architecture concept has been designed to offer full dual-use capability in terms of confidentiality, security, observation scheduling and satellite control priorities management.







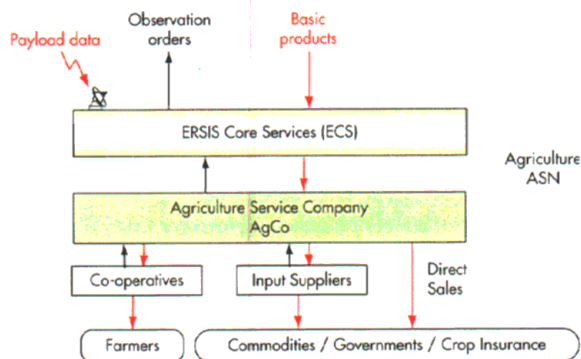
## APPLICATION SERVICES NETWORK CONCEPT

The ASN comprises a network of application specific service providers. These value-added service providers manufacture and deliver final information products to their customers (intermediate or end-users) using generic basic or intermediate products produced by the ECS.

Partnerships with existing service providers will bring together key expertise in many fields: distribution, marketing, sales, final products and services, and R&D. The development of new market segments, such as risks and environmental monitoring or agriculture, will involve establishing a range of partnerships from the involvement of existing service providers to the creation of new and global service structures.

Three application fields - agriculture, forestry and risks - are considered of such significant commercial or strategic value that concepts for potential ASNs have been developed.

The following illustrations show two examples of suitable future ASN architectures for agriculture and risk applications.



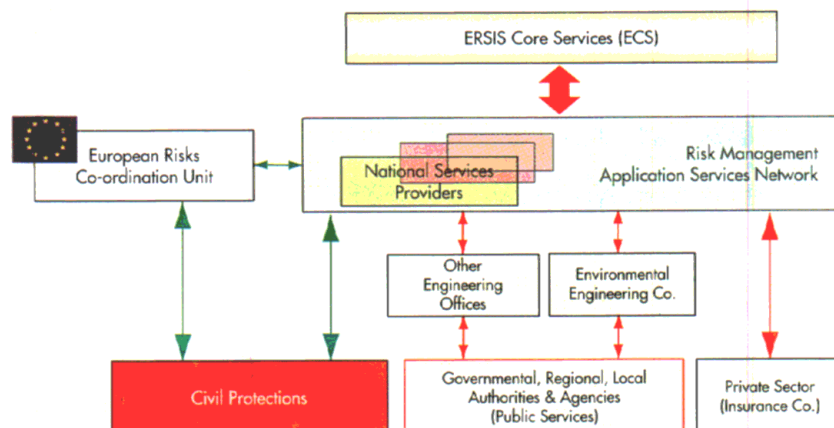
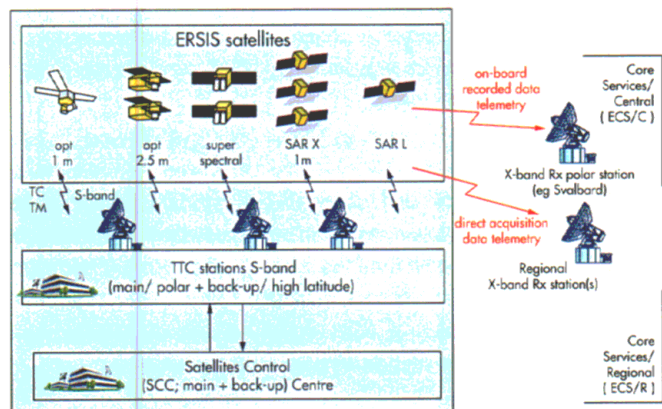
Each architecture is application specific. For agriculture, the need to access a very large number of Precision Agriculture customers efficiently implies a concentration of marketing and technical effort for economies of scale and the use of the existing agri-product distribution network.

Other architecture drivers namely efficiency of production, consistency and standardisation of products; the need to develop a consolidated application specific knowledge base; and the need for fast delivery and dissemination of products are shared with the risks ASN. Whereas the agriculture ASN is designed to serve an essentially commercial market, the risks ASN is aimed at strategic/public service users.

## SPACE SEGMENT CONCEPT

EO data will be provided by both a dedicated ERSIS Space Segment (ESS) and other independent satellites, preferably deployed in close co-ordination with ERSIS satellites, to ensure a coherent space segment.

The fully deployed ERSIS Space segment consists of a dedicated constellation of five complementary types of sensors each serving several applications, launched according to market need. Development costs will be significantly less than for current programs. The satellites will be compatible with small launchers, (e.g. Eurokot, Athena-2, Soyuz ST, Delta-2). Early and low risk, deployment will be possible as the satellites are based on mature technologies currently available in Europe. The baseline configuration of ERSIS space segment includes 9 satellites as illustrated. The ESS also includes the associated ground facilities (TT&C and control centres) necessary to operate all ERSIS satellites.



# ERSIS IMPLEMENTATION

## ERSIS IMPLEMENTATION OBJECTIVES

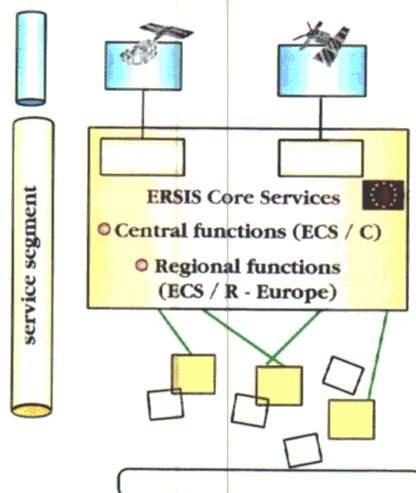
An implementation strategy has been conceived that responds effectively to the main issues identified by the ERSIS study. A progressive implementation is proposed that will :

- initiate harmonisation of the various European players in EO,
- adopt a first-to-market approach to the implementation and deployment of space infrastructure,
- prepare the market and suppliers for the deployment of new EO satellites by providing a set of initial geo-spatial information services,
- minimise the development costs for ERSIS by incremental development of the service segment, both at ECS and ASN level, via reuse of existing infrastructures, harmonisation of players, services, technologies, etc,
- base initial services on the integrated use of existing EO data sources,
- develop new integrated, innovative, standardised and coherent services, sustained by attractive pricing.

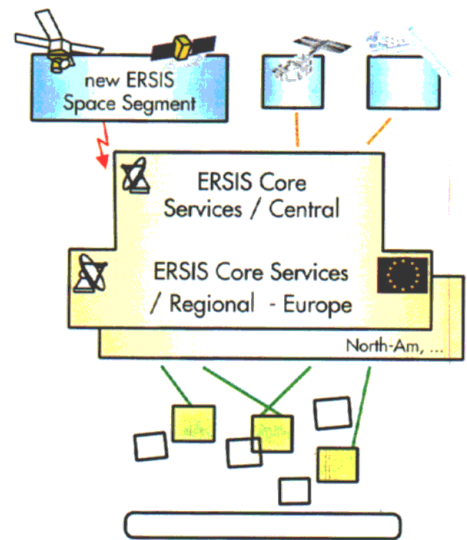
## ERSIS IMPLEMENTATION AND OPERATION PHASES

Both the implementation and operation of ERSIS have been conceived to ensure the early availability of integrated EO services, in parallel with the modular development of new space and ground segment elements. These services will be improved and added to as new elements and functionality are introduced. Implementation of the ERSIS system can be divided into three main stages :

- **Phase 1 (2001 to 2004)** : the goal of Phase 1 is the early establishment and provision of integrated, innovative, and value added services and products to the EO community based on existing satellites. These services will be built from the existing entities (data distributors, VAO's) as reflected in the next figure. It is envisaged that a number of ASNs would develop in parallel, each focusing on different market opportunities.



- **Phase 2 (2004 to 2008)** : the main objective for Phase 2 is the full scale deployment and operation of the ERSIS system. This is achieved through the incremental deployment of the ERSIS space segment elements, the development of new information services from these new space assets and the penetration of non-European markets.



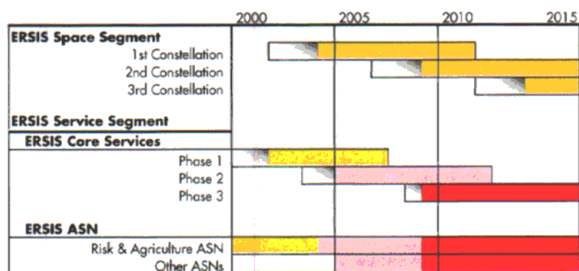
- **Phase 3 (2008 onward)** : the goal of Phase 3 is that ERSIS reaches self-sustainability by continued evolution of the user service segment and increasing development of new emerging markets after 2008.



## ERSIS IMPLEMENTATION AND OPERATION SCHEDULE

The preceding strategy results in an overall schedule for ERSIS, covering both the implementation and operations as summarised below:

ERSIS will be initially deployed in Europe, and will be fully operational in terms of space and ground elements deployed and services provided. The modular architecture of the ERSIS concept will support market penetration, permitting its progressive deployment beyond Europe (USA, Asia, etc...) thus enabling access to the global market.



## ERSIS SPACE SEGMENT DEPLOYMENT

It is intended that the X band SAR will be the first satellite to be launched, in early 2004, to be first to market with this data. Launch of an L band SAR is proposed for late 2004 as many products require complementary X and L band data and there is also no available source of suitable L band data. The launch is delayed with respect to the X band to take account of the longer development time required.

A 1 m optical satellite will provide Europe with an autonomous source of high resolution data. Therefore, an early launch date of 2005 is proposed. Prior to this, development of the market and applications will be initiated in association with a US high-resolution data provider. The launch of the first optical 2 to 3 m satellite is less critical because of the availability of SPOT 5 and is nominally scheduled for 2006. Although it would be possible to achieve an earlier date, launch of the super-spectral satellite is set for 2005 as the market needs to mature using precursor airborne services.

Deployment of additional satellites may be driven by either market volume or revisit / access time requirements. The coverage of a single satellite is limited by its swath width and agility. The optical satellites are very agile, providing along track stereo capability, and wide area coverage using mosaicing.

However, it is anticipated that a second 2-to-3 m optical satellite will be required shortly after launch of the first, i.e. also in 2006, to satisfy market demand. Additional super-spectral and X-SAR satellites are required to meet revisit / access requirements.

A second super-spectral satellite is necessary to ensure the weekly revisit required by operational services, in particular for the precision agriculture market. Therefore, a second satellite should be launched shortly after the first one, in 2005. A constellation of three X band SAR satellites is necessary to achieve the one day revisit, or less, required by risks management and security applications. Therefore, it is important that the three satellites are deployed within one year.

These considerations, have led to the following baseline schedule for the ERSIS Space Segment deployment :

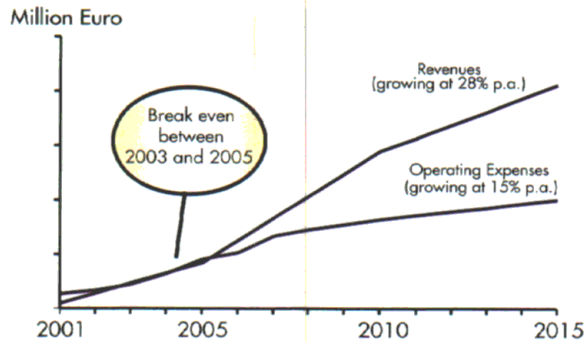
	2003	2004	2005	2006
Optical VHR (1m)			1	
Optical HR (2,5m)				1(+1)
Superspectral			1+1	
SAR X (1m)		1	1+1	
SAR L		1		

The space segment deployment schedule is highly market oriented and will be subject to revision and optimisation, to take account of the evolving EO market conditions, programmatic constraints, and funding capability.

# BUSINESS CONSIDERATIONS

## ASSUMPTIONS AND CONSIDERATIONS

The attractiveness of the ERSIS venture to potential investors is related to the revenues derived from the sale of products/services versus expenses. Revenues will be increasingly capable of covering and sustaining all operating expenses and, in the longer term, some of the expenses related to renewal of the satellite constellation.



Two distinct business periods have been identified, related to the implementation and operations phases as follows :

- **1st business period (2000 – 2010)** ; the first five years investment will finance the early establishment of information services (generic and application specific services and associated R&D) based on the exploitation of existing space (and airborne) assets and, in parallel, finance the deployment of the first constellation. The investment will be considered in two 5 years slices. In the first, investment will be used to establish a profitable business and build investor confidence before the launch of the first ERSIS satellites. The second period of investment will finance the second constellation whilst the revenues will reflect the benefits of the first,
- **2nd business period (2011 – 2015)** ; the business derived from the second constellation investments in 2005-2010 and including assumptions on the years following 2015.

## INVESTMENT

Public funding is a pre-requisite for establishing the business given the level of investment required, and the nature of the initial market (public service oriented). The relative importance of public funding will decline as markets develop and the business becomes self sustainable - benefiting from more market oriented space assets and integration within the mainstream information business sector.

## BUSINESS ATTRACTIVENESS

The attractiveness of the ERSIS venture has been evaluated through the determination of the Internal Rate of Return (IRR) for the two business periods identified – 2000 to 2010 and 2011 to 2015. The choice of these two periods has been governed by the nature of the investments required and the envisaged status of the market. There will be relatively higher risk in the early stages of the business as it is established and it is subject to major development costs. Once the business has been fully established and the market is more developed, the financial results are likely to appear much more satisfactory.

The IRRs for the two periods are as follows :

- **1st business period, 2000-2010 : IRR = 7%** : Public funding accounts for 86% of total investments.
- **2nd business period, 2011 onwards : IRR = 25%** : Public funding accounts for 34% of total investments between 2011-2015.

After 2015, no public funding is anticipated.

The anticipated profile of public and private funding for the business is shown hereafter together with the financial breakdown for the two business periods.



Revenues	2,543 Meuro	
Expenses	1,919 Meuro	
Related investments	1,716 Meuro	
of which :		
Public funding	1,442 Meuro	86%
Non public funding	274 Meuro	14%

**FINANCIAL SUMMARY 1ST BUSINESS PERIOD**

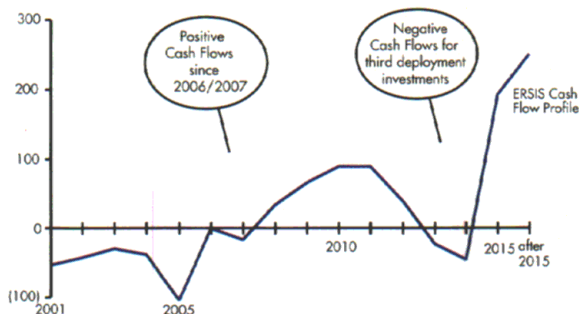
Period 2011-2015	Amount
Revenues	3,622 Meuro
Expenses	1,860 Meuro
Related Investments	976 Meuro
of which :	
Public funding	657 Meuro
Non public funding	319 Meuro

After 2015 (third satellite fleet)	Amount
Revenues	Not determined
Expenses	Not determined
Related Investments	976 Meuro
of which :	
Public funding	- Meuro
Non public funding	976 Meuro

Total Investments Profile 2011-on	Amount	
Related Investments	1,952 Meuro	
of which :		
Public funding	657 Meuro	34%
Non public funding	1,295 Meuro	66%

**FINANCIAL SUMMARY 2ND BUSINESS PERIOD**

The resultant cash flow profile is shown in the following picture.

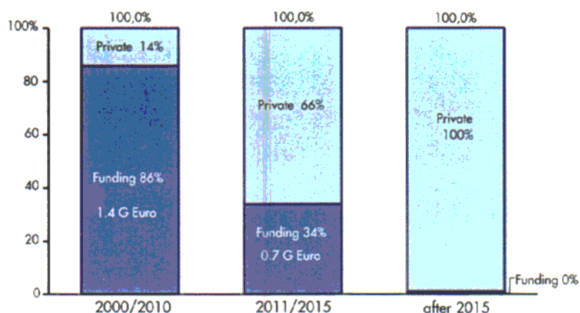


The suggested contribution of the private sector includes participation in infrastructure investment as well as total funding of operations. The low level IRR achieved after 10 years reflects the strong interest of industry in the proposed plan. It shows that Industry, with the expected backing of public authorities, is confident in the longer term plan.

**PUBLIC AND PRIVATE PARTNERSHIP**

The Public and Private Partnership (PPP) is a new concept in government finance. Although some ESA Member States have experience of its application, few have practical use in its application to space projects. Many of the issues that will need to be addressed will be institutional, rather than financial or technical.

Given the level of financial analysis that has been undertaken at this stage of the concept definition, it has not been possible to initiate discussions with specific potential stakeholders to develop a scheme for a PPP. However, it is likely that PPP (or some derivative of it) could unlock new sources of finance for ERSIS to supplement the more conventional financing provided to date for EO by space agencies (ESA and national).



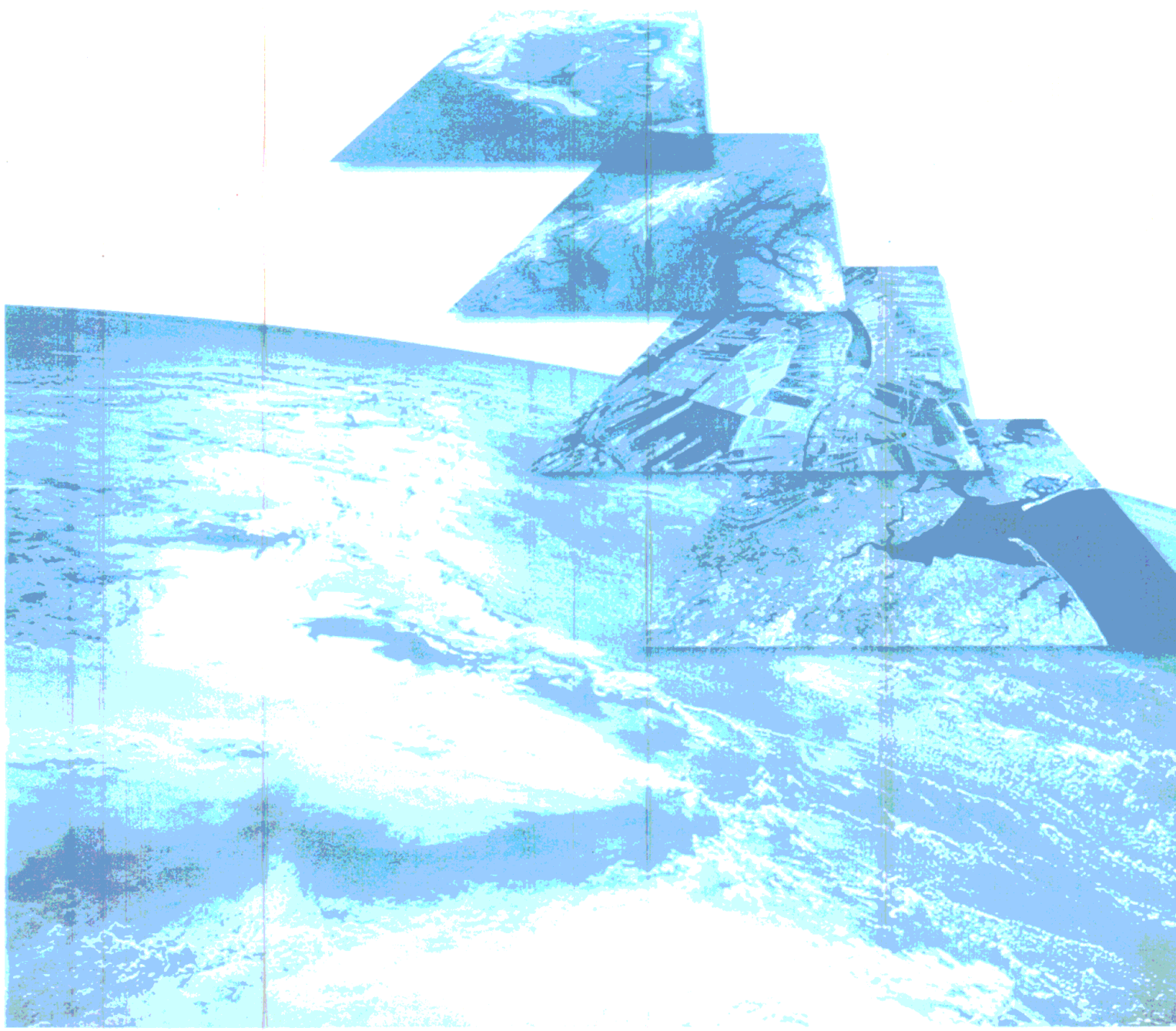
**PROFILE OF INVESTMENTS**

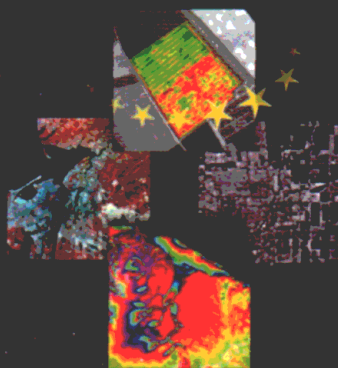
The ERSIS concept is proposed for consideration within the European Space Strategy. Throughout the study, the team has expressed the strong need to federate the European satellite service providers to initiate European Core Services (ECS). "Working rules" for setting up these Core Services will need to be elaborated between industry, agencies and EC within the next few months.

At the same time research, product development, market development must be focused to the goals of the proposed ERSIS services in order to allow the provision of mass products to the customer base. For this purpose, initial services and ASN development should be established where possible to extend the market demand where customers are available and to create the market pull for those products and services which are not yet mature. This aim can only be reached by federating and strengthening the downstream sector towards specialised and complementary application services.

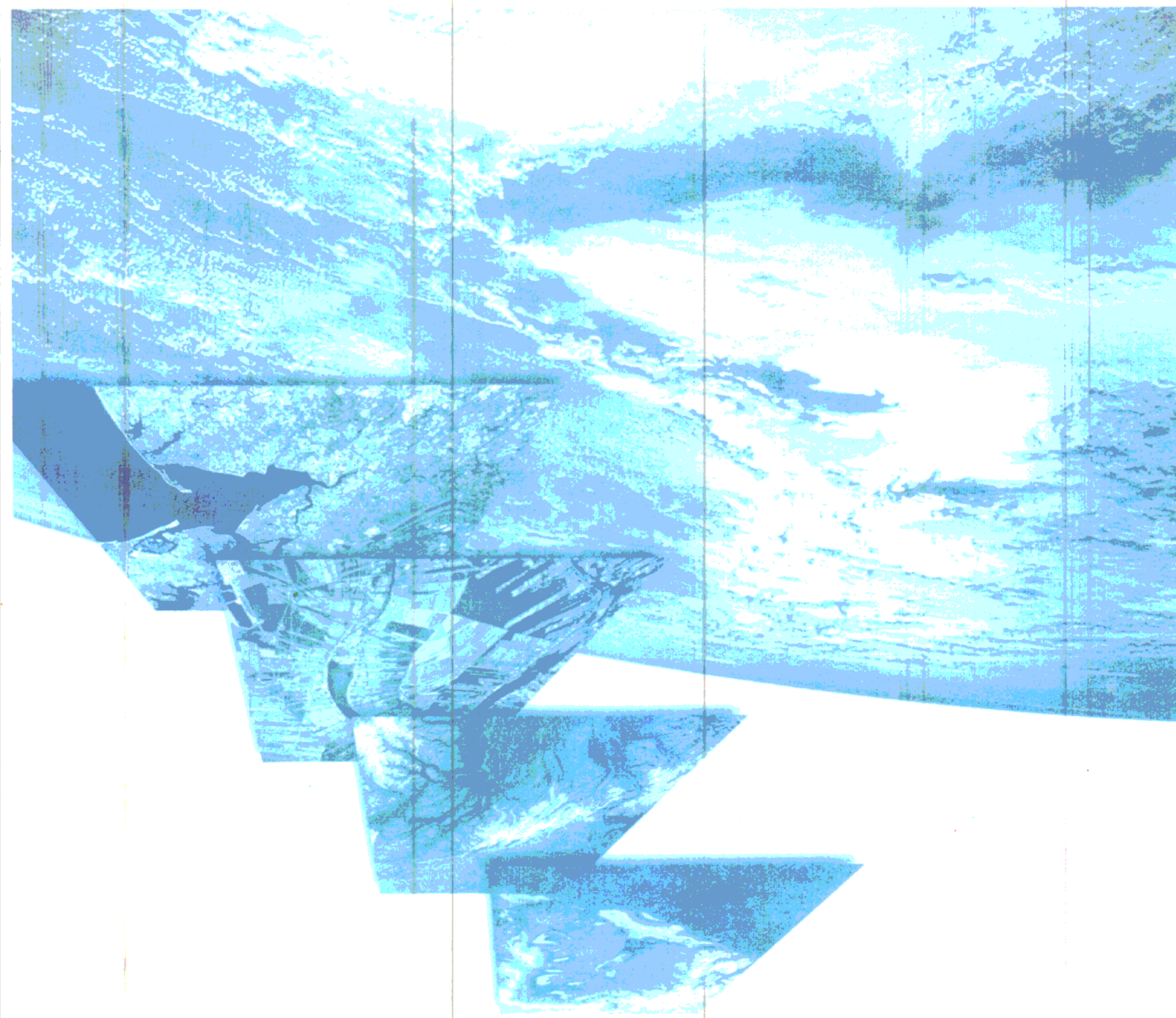
More fundamentally, the next steps are driven by the following questions :

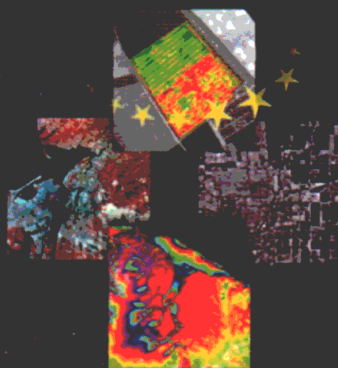
- is a PPP approach applicable to ERSIS in its entirety, to some of the proposed missions or to only parts of the service business envisaged ?
- who might fund the various elements and what returns would they seek ?
- what institutional structure (existing or to be created) is needed to allow PPP to proceed ?
- which relationships need to be established with the already existing European Value Added Companies ?
- what data policy should be adopted, in particular with the public sector financing a significant part of the PPP ?











## **Compte-rendu réunion Congrès CFTC de novembre 2002**

J'ai assisté uniquement à l'avant dernière journée (soit la journée du jeudi).

Je fais ci-dessous le compte rendu de la plénière qui concernait le document d'orientation pour les 3 ans à venir.

Il y a eu ensuite une table ronde sur la mondialisation mais c'est un peu compliqué à résumer car beaucoup d'intervenants.

### **1- Le nouveau statut du travailleur . Michel Coquillion**

Nous sommes passés de l'ère du salarié respecté à l'ère du salarié jetable. Il faut créer une autre forme de sécurité, que les droits (retraite, sécurité sociale, mutuelle, ...) ne soient pas perdus lors des différents temps de la vie (chomage, arrêt formation, arrêt pour les enfants, ...).

L'assistantat est une atteinte à la dignité de l'homme, l'homme doit être responsabilisé et maître de lui.

On doit passer au statut du travailleur et plus du salarié (cela comprend les périodes de non travail).

Position CFTC :

Emploi : il y a un aspect social qui impose de sortir de l'aspect purement financier. Il faut que l'Etat joue son rôle dans le PARE et mette en place les emplois qui permettent cet accompagnement ; développer l'insertion (la formation des jeunes doit être plus proche des besoins professionnels) ;

salaires : SMIC à 1200 Euros, égalité salaires H/F, vraies négociations dans les branches ; le salaire doit permettre à chacun de vivre dignement.

Politique volontariste de la protection sociale. La retraite, la sécurité sociale doivent rester solidaires et dans le paritarisme. Les retraites doivent rester par répartition, la pénibilité des conditions de travail doit être prise en compte, plus de place au libre choix.

Formation : doit être possible tout au long de la vie (même après l'échec scolaire, il doit être possible de se former).

Politique familiale : aujourd'hui, c'est quand les enfants coûtent le plus cher qu'ils sont le moins pris en compte.

### **2- Le travailleur et la cité. Gabrielle Simon**

Le salarié doit pouvoir faire valoir son point de vue lorsque les décisions importantes se prennent. La CFTC préconise la généralisation d'une structure de surveillance directoire (1/3 des sièges attribués aux élus).

Les entreprises doivent assumer une responsabilité sociétale.

Résolution négociée des conflits, recours à la conciliation et à la médiation.

Extension de l'alerte (en particulier pour le public).

Participation, intéressement : à généraliser, la CFTC est plus réservée sur les stocks options qui privilégient le court terme.

Une économie de marché ne se régule pas par elle-même, il y a nécessité de faire intervenir l'Etat et les partenaires sociaux.

Service public accessible à chacun à égalité.

### **3- La dynamique chrétienne pour le développement de la CFTC. Michel Coquillion**

La CFTC ne peut arrêter sa vision à la France. Il faut une vision européenne et même mondiale.

D'autres organisations syndicales d'inspiration chrétienne sont d'accord, il faut travailler avec elle, en tous cas au niveau européen.

Il faut que nous connaissions nos propres valeurs.

Aujourd'hui, le nombre d'adhérents CFTC augmente, la CFTC progresse.

Il faut mettre en place les moyens maîtrisés de notre développement : fichiers communs, transparence et solidarité dans les finances, soutien aux structures, démocratie interne dynamisée (espaces de dialogue à renforcer : allons-y pour construire non pour faire de la dialectique).

Le syndicalistes doivent être plus à l'écoute des salariés, porteurs de ce que veulent les salariés, privilégier le terrain à la réunion.

L'équipe confédérale doit être à l'écoute des mouvements et les mouvements à l'écoute des salariés.

#### **4- Conclusion. Gabrielle Simon**

S'engager pour le personne humaine, contribuer à la construction d'un monde plus humain et solidaire.

Nos valeurs sociales chrétiennes sont le moteur de notre action.

#### **Divers**

J'ai recueilli divers documents que vous pouvez m'emprunter si vous le souhaitez , la liste est ci-dessous.

- Négociateur : le bon risque
- Présence syndicale dans l'entreprise
- Pour mener une action efficace dans l'entreprise

Fabienne Duclos

74524