

## VERIFICATION OF EUROPEAN FARM SUBSIDIES BY SATELLITE

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### 1. Abstract.

The dissemination of remote sensing data faces several restrictions. As an expression of sovereignty, the United Nations Principles on Remote Sensing give sensed States access rights to the primary and processed data of their territory. Secondly, under the domestic protection of intellectual property rights, analyzers of remote sensing data have exclusive rights on their work product, which contains at the same time the original remote sensing primary and processed data.

This article focuses on restrictions to remote sensing data which contain personal information, imposed by data protection and privacy rights. As an example serves the establishment of databases with remote sensing and personal information for the verification of farm subsidies in the European Union (EU).

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### 2. Geographic Information Systems.

Remote sensing images have been used for quite a long time as a tool in the assessment of natural resources.

In recent years, the remote sensing data are increasingly organized in Geographic Information Systems (GIS) which use "computer hardware and software to manipulate and analyse a wide variety of data organized geographically...All sorts of information are combined with maps of other spatial data and accessed on workstations" (1). GIS is adding value to the images and thus strengthening the remote sensing imagery market.

Additionally, the use of multispectral channels and the continuous improvement of image resolution for commercial uses, combined with "neuronal networks" (2), a self-learning automatic program, raise the accuracy in the image analysis. All these combined elements spare time, costs and, in the near future, also high qualified technicians. Consequently, the nature of GIS provides easy access to a vast amount of remote sensing data which are combined with information from other sources.

### 3. A European Remote Sensing Monitoring System.

Recently, satellite remote sensing imagery was introduced by the European Union (EU) as a tool for the control and enforcement of economic policies, as a part of its agricultural policy reform.

The Directorate General for Agriculture (DG VI), in cooperation with the Statistics Bureau, uses satellite data for the monitoring of the growth of olives, citrus fruits and wine in southern Europe <sup>(2)</sup>, while the Directorate General for Science, Research and Development (DG XII) runs a program called "Monitoring of Agriculture with Remote Sensing" (MARS) based also on satellite data.

In order to monitor farmers' fields, the EU Council has enacted regulation No. EEC 3508/92 in 1992 for the introduction of "Integrated Administrative and Control Systems" (Integrated Systems). This regulation, with binding force for all Member States, has the objective to verify the subsidies granted to farmers and to prevent and punish misuse. Under this regulation, Member States have the obligation of implementing databases with information coming from several sources, including aerial and satellite remote sensing imagery (Art.4)<sup>(4)</sup>.

Until 1993, each Member State applied its own rules for the granting of EEC subventions to its farmers. With the new agricultural policy, the administrative and control mechanisms in all the Member States are standardized. The basic elements of these Integrated Systems are national databases which contain personal data of the farmers, including their subsidy application, their social situation, family status and income, and a system for the identification of fields <sup>(5)</sup>.

Under this regulation the subsidy applications will be verified by administrative measures, on site inspection and by aerial or satellite remote sensing (Art.7).

The misuse of the EU farm subsidies in the past, like the deviation of financial support for other purposes, may have been the reason for the enactment of the EU Regulation on Integrated Systems. But the permanent and systematic monitoring of agricultural productivity at the individual level, combined with the request to disclose the financial and social standing of the farmers, clearly overshoots this purpose.

### 4. Reaction of the German Data Protection Representatives.

Germany's Constitutional Court has established the doctrine of informational self-determination as a special notion of personal liberty <sup>(6)</sup>. Data Protection Acts exist at the federal and State levels with the aim to protect individuals against the infringement of their right of informational self-determination. The individuals have the right to decide about the disclosure of their personal data. This constitutional privacy right includes the protection of individuals against the collection, archiving, processing and transmitting of their personal data unless they have consented <sup>(7)</sup>.

The Conference of German Data Protection Representatives <sup>(8)</sup> has objected to the establishment of databases under EU regulation No. 3508/92, pointing out that it does not provide for the protection of privacy rights of the affected farmers.

The Representatives, at federal and state levels, considered that in view of the individuals right of informational self-determination, this regulation does not comply with the principle of proportionality <sup>(9)</sup>: the executive measure shall not be stronger and the public intervention not be graver than can be justified for the purpose of the measure.

The conference of Data Protection Representatives proposed:

- a) that the systematic remote sensing monitoring of all agricultural areas (by airplane or satellite means), be replaced by random tests of selected areas;
- b) that only decentralized databases in each state be established (no European or centralized national databases for agriculture);
- c) that the EEC regulations implementing the Integrated Systems shall not become the legal framework for databases for other uses (e.g. tax purposes).

#### 5. Data Protection in Europe.

Data protection is not any longer limited to a small number of States, but is gaining importance internationally. In the EU, only Italy and Greece have no data protection legislation. In the last three years Belgium, Portugal, Spain and Switzerland enacted data protection laws.

Since 1990 the Commission of the European Union works on a data protection directive, which will provide a framework for all member states and in particular those with no data protection legislations to date.

So far, the drafts reveal that this EU directive will not establish a lower standard of data protection than the German and French legislations which are considered to be at the upper end <sup>(10)</sup>.

#### 6. Free Flow of Remote Sensing Data Versus Data Protection and Privacy Rights.

##### a) Sovereignty Parallel.

Having discussed the specific problems of European farm subsidies and data protection, a more general issue arises: Do data protection and individual privacy rights limit the free flow of remote sensing data? This type of problem is not new. For 17 years the permissibility of remote sensing of the territories of the States through satellites was discussed in United Nations Committee on the Peaceful Uses of Outer Space. During these discussions, two positions existed: freedom of information through satellite data versus national sovereignty. With the adoption of Resolution 41/65 on Remote Sensing Principles <sup>(11)</sup>, these problems were solved. State sovereignty is no longer a limitation to satellite teleobservation, but certain restrictions apply to the dissemination of data.

##### b) Where is the restriction?

To identify the impact of data protection on remote sensing activities, the nature of the data relating to individuals must be examined. Principle I of the UN Remote Sensing Principles distinguishes between primary data, processed data and analysed information. Under Principle I (e), the dissemination of processed data is considered as a "remote sensing activity" but not the dissemination of analyzed information. As the images do not originally contain the necessary elements for the personalization of the data, but are added at a later stage, only analyzed information can contain personal data and thus could fall under the (national) restrictions of data protection. Although under the Remote Sensing Principles the dissemination of analysed data does

not constitute a remote sensing activity, data protection restrictions to analysed information affect significantly the remote sensing business.

c) How Data Protection Relates to Intellectual Property Rights.

It is interesting that under domestic law also other restrictions apply, namely those of intellectual property rights, relating to the added value of the analyzers. It is this same added information that can have the quality to personalize the primary and processed data. Under a proposal for a directive <sup>(12)</sup> the intellectual property rights relating to databases will be harmonized in the EU <sup>(13)</sup>.

d) What Kind of Restrictions Could Data Protection Impose?

i) Transfer of Personal Information to Third Parties. The storage of data as such is not the main concern, but the transfer to third parties. The combination of processed data with other personal data makes possible the individual identification of properties (e.g. land, buildings, automobiles) and the assessment of their value, productivity, etc. If the analysed information contains personal data, a dissemination is only permissible after the consent by the individual, whose personal information is involved. This is in compliance with Article 12, par. 1 of the EU draft directive on protection of databases <sup>(14)</sup>, which recognices the data protection and privacy rights subsisting in information incorporated into a database.

ii) Government Uses of Personal Data. Other restriction apply to government uses of personal data. This is an area strongly influenced by each States' civil rights culture and only some

cornerstones can be set to indicate desirable approaches.

The use of personal information should be limited to the immediate needs and well defined purposes of the authorities. The transfer of personal information from governmental database requires prior consent by the individual, unless higher public interests are given (e.g. prosecution of criminal acts). Additionally, under the principle of proportionality, the State intervention into the privacy rights of an individual should be not out of balance with the purpose to be achieved. A systematic screening of individuals by a government using remote sensing is not acceptable under these considerations. Instead, State interference should be limited to random checks or well defined examinations, if suspicion has solidified that a known person has committed criminal acts or infringed the public order.

7. Conclusions.

The dissemination of remote sensing images is subject to restrictions. As an international principle, States' sovereignty in the field of remote sensing activities is expressed through State access rights to primary and processed data of its own territory.

In national legislations and in the near future at European level, the analyzer has exclusive intellectual property rights in analyzed information resulting of its work, which may also contain remote sensing data.

In the domestic law of some countries, and also at European level, a legal framework is evolving to protect the individual's right to informational self-determination, where the individual has the right of prior consent for the disclosure of personal data.

As evidenced by the Integrated Systems for the verification of EU farm subsidies, remote sensing data can be combined with personal information in databases.

One may wish that the EU draft directive on data protection should make express reference to combined remote sensing and personal data and thus to provide for harmonized data protection in these cases.

*Notes:*

(1) Asker James, *Remote Sensing Sales Grow with Expanding Data Needs*; *Aviation Week and Space Technology*, p. 46 (July 13, 1992).

(2) Each sensed object emits or reflects radiation which can be measured according to a scale number. If the object is observed through different filters, the emission, diffraction or reflection response will have a different number on the scale. The set of all numbers of one object sensed with different filters is called "spectral signature". Thus, each natural object has a unique spectral signature. Neuronal networks are able to "learn" from a given spectral signature of a natural resource, in a way that it can recognize the same and discriminate it later on automatically when sensing large areas among all the present elements in an image.

(3) Kesberg Harald, *Neurales Netz unterscheidet Wald und Feld*; *Handelsblatt*, p. 31 (Juni 15, 1994).

(4) *Verordnung EVG Nr. 3508/92 des Rates*, (Nr. L 355/1) (Nov. 27, 1992).

(5) Globig Klaus, *Datenschutzbehörden; Datenschutz und Datensicherung Zeitschrift*, N° 2 (1993).

(6) *Entscheidungen des Bundesverfassungsgerichts*, BVerfG 65,1.

(7) *Id.*

(8) *Konferenz der Datenschutzbeauftragten des Bundes und der Länder*, 46. Sitzung, (671.10.21) Berlin, (Okt. 1993).

(9) *Supra note 5.*

(10) Gola Peter, *Zwei Jahre neues Bundesdatenschutzgesetz—Zur Entwicklung des Datenschutzrecht seit 1991*; *NJW*, p. 3109-3118 (1993).

(11) *U.N.G.A. Res. 41/65* (Dec. 3, 1986).

(12) *Commission of the European Communities, COM(92) 24 final-SYN 393* (1992).

(13) *The European Space Agency (ESA) assisted by the ECSEL has proposed also to cover the legal protection of satellite remote sensing data in this directive (ESA/AF (93).*

(14) *Supra note 11.*