

*papers prepared by NOAA/
Commerce (1980)*

Jerry Ostrov
11/4/80

Issue 4

I. Issue

Should the rates charged by the private sector owner and operator be regulated so as to ensure that certain classes of users are able to receive land remote sensing satellite services at affordable costs, or should other means be used to ensure that such users have access to needed data.

II. Background

The problem of insulating certain classes of users from prices that may exceed their means is related to Ostrov's Issue Paper 8 which considered the question whether the system should be designed to satisfy the needs of legislatively specified classes of non-Federal users.

Because the private sector owner will enjoy a property interest in the products of the system, the price charged for data need only reflect the owner's predilections and the willingness of the market to bear the price charged. However, there are countervailing policy issue at stakes. Since it may be argued that land remote sensing from space was developed to serve the public, there is the issue whether potential users should be denied access to remote sensing services due to an inability to pay prevailing market rates. State and local governments and planning Agencies might be included within this class of users.

In addition to the above, there may also be foreign users whose interests are of importance to U.S. foreign policy and who may not be in a position to pay the prevailing market rate for services supplied by the U.S. operator. Denying such users Landsat data solely on cost grounds could produce adverse foreign policy consequences. If these countries can obtain data from foreign operators at a subsidized rate, the U.S. may lose permanently the benefits associated with assisting such user countries through the provision of land remote sensing satellite data.

III. Alternatives

- (1) Rely on existing grant, revenue sharing and foreign aid programs to assist favored classes of users.
- (2) Legislatively establish special grant, revenue sharing or foreign aid programs to supply needed level of subsidization.
- (3) Through ratemaking or other appropriate provisions, legislatively control the price that can be charged certain classes of users.

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IV. Pros and Cons

(1) Rely on existing financial authorities.

Pros:

- o Defers to a later and, perhaps, more appropriate time, question of who should receive price subsidies and under what circumstances relief should be provided.
- o Avoids complex legislation which, in the case of options 2 and 3, might divert legislative attention from more pressing Landsat issues.

Cons:

- o Adequate funds may not be available under existing authorities.
- o Addressing issue on an ad hoc basis may produce inconsistent results.
- o Failure to address issue in the legislation may raise concerns of :
 - legislators who are sympathetic to the needs of state and local agencies;
 - elements within the Administration e.g., DOS and AID, who are concerned with the needs of foreign users.
- (2) Establish new subsidy programs tailored to needs of specified classes of users. The programs could be administered by NOAA or by those agencies now possessing responsibility for such assistance programs.

Pros:

- o Forces legislature to confront question of who is entitled to price relief and under what circumstances relief is to be granted.
- o Tailors subsidy program to needs of specified classes of users.
- o Avoids uncertainty associated with relying on existing authority.

Cons:

- o If administered by NOAA, puts NOAA in untenable position of regulating a new industry and subsidizing its users.
- o Complex legislative process, potentially involving a variety of Congressional committees.

- o Will add measurably to NOAA's administrative burden if NOAA is responsible for subsidy programs.
 - o Legislatively ranking subsidy entitlement of different classes of users likely to be difficult task.
 - o May divert legislative attention from more pressing Landsat issues.
- (3) Through ratemaking, or otherwise, legislatively control price that can be charged specified classes of users.

Pros:

- o Promotes confidence of certain users e.g., state and local governments, that data will continue to be made available at fair and reasonable prices.
- o Provides certain results, tailored to needs of specified classes of users.

Cons:

- o May not be necessary. Corporation cannot afford to price itself out of the non-Federal user market.
- o May require ratemaking program--attendant regulatory burdens may be more than NOAA wishes to bear or is capable of managing without substantial additional resources.
- o Effectively establishes a two (multi)-tiered pricing system--for system to be viable, Federal users will probably have to absorb the difference between the legislatively limited price and price that would otherwise be paid by favored classes of users.
- o Absent substantial offsets as described in above "con", may make system economically unattractive to prospective private sector operator.
- o Complex legislation may divert attention from pressing Landsat issues.

V. Recommendation

Jerry Ostrov
11/6/80 (Revised)

Title: Legislated monopoly

I. Issue

Should the legislation provide that only the competitively selected or legislatively created private sector corporation be allowed to engage in land remote sensing or should it provide that other companies may also compete in the land remote sensing satellite arena?

II. Background

In the Transition Plan submitted to OMB, NOAA recommended initiation of preliminary system studies on the basis of a hypothetical Middle System with a 15 meter TM band 3, using either the Landsat D multi mission spacecraft or a newly designed spacecraft. No decision was reached on inclusion of the stereoscopic capability sought by the non-renewable resource industry. If stereo is not included in the system contract with the private sector operator, the question arises whether someone other than the contracting entity should be allowed to develop it. However, this question is answered, there is the related question of what regulations should be imposed on the chosen system operator? The latter question will be considered in discussion 7(A).

III. Alternatives

- (1) Legislatively, confer monopoly status on competitively selected or legislatively established corporation for all land remote sensing space services (including those not required by the Federal government.)
- (2) Allow other U.S. companies to develop and market land remote sensing satellite capabilities not provided to the Government by the chosen corporation.

IV. Pros and Cons

- (1) Conferral of monopoly status.

Pros:

- o In the case of competitively selected corporation, may be necessary to induce risk capital.
- o In the case of legislatively created corporation, insulation from competition may make investment more attractive.

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- o Experience acquired by single corporation may contribute to more orderly development of new system capabilities.
- o Enables system subsidized by U.S. dollars to develop, unimpeded by competing domestic systems.
- o Prevents "cream skimming."

Cons:

- o Development of new capabilities may be inhibited if they depend upon monopolistic rather than competitive market forces.
- o In case of competitively selected corporation, contracting corporation may be extended to the point where additional investment not possible.

(2) No monopoly status.

Pros:

- o Promotes competition for potentially valuable services in field which might, in any event, be entered by foreign operators.
- o May appease members of the non-renewable resource industry and their legislative supporters who may be upset over failure to include stereo in initial provision of service.

Cons:

- o In case of competitively selected corporation, may make it difficult to attract risk capital.
- o If new capabilities successfully developed by a second corporation, might make it difficult for government-financed corporation to market its products thereby undermining potential for government to recoup its investment.
- o "Cream skimming" possible and likely encouraged.

V. Recommendation

To enable the private sector operator to receive an acceptable return on those services provided to the government, monopoly status, coextensive with the terms of the contract with the government, will be required. Anything less would likely discourage investor interest due to the threat of non-contracting companies skimming off the most valuable components of the program. A contract for government services might be possible in a non-monopolistic setting, but at a price that would likely be unacceptable to the government.

By contrast, no persuasive arguments exist in favor of vesting the private sector operator with monopoly status over those remote sensing activities, that extend beyond the terms of its contract with the government. Vesting the corporation with the exclusive right to develop new systems shelters it little since foreign operators are not foreclosed from developing whatever systems they choose. Moreover, by providing the new corporation with the exclusive right to develop new system options, advances in the field will be dependent on the whim, vision and financial wherewithal of just one company. This is undesirable from the standpoint of basic competition theory. It is also likely to alienate both those concerned about the monopolistic position of the company as well as those concerned about specific avenues of development. Accordingly, unless an exclusive contract is the only means available to attract initial investor capital, it should be rejected in the legislative process.

Jerry Ostrov
11/6/80 (Revised)

Issue 7(B)

I. Issue

What regulatory requirements should apply to private sector operators other than the competitively selected or legislatively created corporation?

II. Background

In issue paper 7, I concluded that the legislation should not confer de jure monopoly status on the corporation that provides satellite-based land remote sensing services to the Federal government. The result is that any other company can, at its own expense, develop remote sensing capabilities such as stereosat and market its own products to augment services provided by ^{the} competitively selected or legislatively created corporation.

In issue paper 7(A)⁽¹²⁾, I considered the regulatory requirements that would be required to ensure that the competitively selected or legislatively established corporation satisfied U.S. domestic and foreign policies. I noted that many of the policies were generated by Presidential Directive, but that many were developed in-house within NOAA and were motivated by two factors. The first was the de facto monopoly status that such a corporation would enjoy and the concern that it not abuse this status or use its position to deny services to user groups whose needs were deemed to be in the public interest. The second reason had to do with the fact that much of the financial support for the system would be coming from the Federal government and that, for the foreseeable future, most of the system's data products would be used to satisfy Federal requirements. Under these circumstances, regulation was deemed appropriate both to protect the Federal interest and as a quid pro quo for the favored position enjoyed by the corporation largely at Federal expense.

Given the PD 37 directive that "all United States earth-oriented remote sensing satellites will require United States government...supervision or regulation," the question which arises is whether the regulatory requirements applicable to the competitively selected or legislatively created corporation ought also to apply in the case of a self-funded corporation providing a remote sensing service not covered in the chosen corporation's contract with the government.

III. Alternatives

- (1) Limit regulations to those national policies which transcend regulation of the competitively selected or legislatively established corporation. Basically, such policies would be those found in lists (A) ("Policies contained in International Treaties and Presidential Directives") and (B) ("Policies relevant to National Security") of Ostrov's Issue Paper 7(A)/12.
- (2) To maximum extent possible, make regulations coextensive with those imposed on competitively selected or legislatively

IV. Pros and Cons

- (1) Limit regulations to those required by treaty, Presidential Directive or national security.

Pros:

- o Tailors regulations to national needs, rather than rationale unique to (Federally assisted) competitively selected or legislatively created corporation.
- o Consistent with Presidential Directives which by their terms extend to all civil space programs.

Cons:

- o Arguably the regulatory provisions dealing with value-added services and information extraction are equally applicable to both the competitively selected or legislatively established corporation and the non-contracting corporation since in each case the company will have an exclusive hold on the services being rendered.

(2)

Pros: Make regulations co-extensive.

- o No "pros" unless sheltering de facto monopoly status of competitively selected or legislatively created corporation by making it difficult for other firms to enter field is seen as a "pro."

Cons:

- o Some of the regulations applicable to competitively selected or legislatively created corporation bear no relationship to self-funded company that might enter field.

V. Conclusion

Option 1 is recommended. Once it has been decided that self-funded companies will be allowed to compete in the land remote sensing arena (see Ostrov's issue paper 7), little justification exists for imposing regulatory road blocks not otherwise dictated by treaty, Presidential Directive or national security.

9.

10/24/80

W.H.E.

Title: Value Added Services and Exploitation of Derived Information

Issue: Should The Option 1 or 2 owner/operator be precluded from engaging in added services* or from exploiting derived information*?

Background: Most value added service companies are concerned that the operator will be in a preferred position to task the system* or to have more immediate access to data than will non-operator competitors. Some end users (in both the renewable and non-renewable resource fields) are concerned that the system operator will be in a position to exploit for economic advantage the information to which it will have access because of this preferred position. Some foreign governments have similar concerns. The feeling among these groups is that the operator should be forbidden by statute or regulation from engaging in the value added services or the exploitation of derived information.

On the other hand, because the market for data and standard products is largely potential, rather than existing at this time, it is recognized that the operator must have considerable latitude in developing the future market and seeking additional revenues to offset investments and system costs. A prohibition against value added or data interpretation services by the operator would severely limit its potential for market development, leading to even larger, longer lasting Federal support.

One suggested solution to this dilemma is to allow the operator to conduct demonstrations, training and other actions as are necessary for market development, but forbid it (by legislation, regulations or contract stipulations) from engaging in competitive value added services, or exploiting derived information. Regulations or contract stipulations would have to be developed carefully to distinguish between allowable market expansion activities and exploitations that are prohibited. Enforcement of these prohibitions be difficult. Such a prohibition would not necessarily preclude creation by the operator of an independent wholly owned subsidiary company for such competition and exploitation, provided this company had no preferential access to tasking the system or to access to data, and pays the same price paid by all other users.

Options:

1. Take no action to limit activities of the owner/operator in value added and information extraction services.
2. Preclude the owner/operator (or any wholly-owned subsidiary, or parent corporation) from engaging in any competitive value added services or exploitation of derived information.
3. Limit the value added and information extraction activities of the owner/operator to demonstration, training and market develop-

ment. By not stating any prohibitions against it, allow a subsidiary company to engage in such operational and competitive activities, provided that it has no preferential access to the system or its data services.

* See definitions on the last page

Pros and Cons:

Option 1 - Take no action to limit value added services or information exploitation activities of the owner/operator.

PRO

- o Allows for maximum market development and building of future revenues to offset investments.
- o No enforcement or penalties required.
- o Improves the possibilities for attracting capital.
- o Maximum opportunity to reduce long term Federal support.

CON

- o Would be opposed by value added firms which are already in the field. Would add competition in an industry that is now struggling to be established.
- o Increases international sensitivities and concerns.
- o There will be opportunities for abuse and/or the perceptions of abuse.

Option 2 - Preclude any value added services or information exploitation activities by the owner/operator or by any wholly-owned subsidiary or by a parent corporation.

PRO

- o Minimizes domestic competition and international concerns.
- o Enforcement relatively simple, because company activities of this nature would be relatively easy to detect.

CON

- o Precludes market development.
- o Could further inhibit investment.
- o Could inhibit raising capital.
- o Minimizes opportunity to reduce long term Federal support.
- o Prohibition against activities by a parent corporation would effectively eliminate existing private sector competition, because most candidates are parts of conglomerates, or they have other business interests which may already be involved in activities that would be prohibited.

Option 3 - In the legislation allow market development but preclude routine value added services or exploitation of derived information. Negotiate the distinction between allowed and prohibited activities in the development of regulations, in the contract between the owner/operator and the government, or both. Allow these activities by a subsidiary company or parent corporation.

PRO

- o Allows market development by the system owner.
- o Allows parent corporation to explore other sources of revenue.
- o Improves the possibilities for attracting capital over option 2.
- o Improves the chances of reducing long term Federal support over option 2.

CON

- o Separation between parent and subsidiary company may not be seen as clean.
- o National and international concerns may still be raised.
- o Could be difficult to enforce and regulate limitations on market development activities of the owner/operator. Regulation to ensure no preferential access by a subsidiary or parent corporation might be difficult.

Preferred Option

The difficulties (under Option 3) of distinguishing between allowed and prohibited activities, and of enforcement and regulation are recognized. However, Option 3 is preferred because it allows greater opportunities for market development and increasing system revenues, while it avoids most of the objections of Options 1 and 2.

* Definitions

Value Added Services-- functions of that portion of the private sector which derive information from the Landsat data and standard data products, either independently or in combination with other data sources, under contract to an end user, or as a proprietary service which is offered for sale to one or more end users.

Information-- knowledge gained by an end user (through analysis and interpretation of Landsat data and standard data products) about renewable resources (e.g., crop production forecasts), non-renewable resources (e.g., the possible location of minerals), and environmental conditions and other applications. This knowledge can be obtained by purchasing the products of the value added industry, or by analysis or interpretations conducted by the end user.

Task the System-- to request special data collection activities from the satellite, or to request special priority processing once the data is received at the ground station.

Exploiting Derived Information--through trading in the commodities market, purchasing leases, and other activities of a business nature, obtain economic advantage as a result of having access to the information derived from the Landsat data and standard data products.



10.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 Washington, D.C. 20230
 OFFICE OF THE ADMINISTRATOR

November 4, 1980

TO: S - David Johnson
 Sx1 - Diana Josephson

FROM: GCL - Michael A. Levitt *Mike*

SUBJECT: Provisions Relating to In-House Conflict of Interest/Use of Insider Information

Issue

If a corporation (either legislatively-created or already established) is granted a monopoly by the Government to produce land remote sensing satellite data and standard data products, it would be inequitable to allow the system owner/operator to take advantage of this position to gain a competitive edge in exploiting this information. End users (in both the renewable and non-renewable resources fields) have expressed concerns that the system operator will be in a position to exploit for economic advantage the information to which it will have advance access. Some foreign governments have expressed similar concerns. (See Eskite Issue Paper No. 1) The question has arisen whether provisions are needed in the legislation to regulate the use of insider information by the system owner/operator.

Discussion

It is clear that the system operator must not be given a preferred position in exploiting for economic advantage the data and standard data products, which it acquires from land remote sensing satellites. At a minimum, legislation should provide that each officer or

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- 1 It may be possible, however, to allow the corporate owner/operator to form a subsidiary for purposes of exploiting land remote sensing data, if a system can be devised which assures other standard data product users that the subsidiary will not receive preferential treatment.



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employee of the corporation who performs any duties for the land remote sensing satellite program, and who has any financial interest in any commercial enterprise which may benefit from the data or standard data products produced by the satellite system shall file a written statement disclosing all such interests on an annual basis. In addition, the legislation should probably provide that employees of the corporation who have advance access to data and standard data products be precluded from either obtaining a financial benefit or aiding others from obtaining a financial benefit based on their access.^{2/} Finally, the legislation might include provisions assessing fines or mandating other penalties against persons who wrongfully disseminate data or standard data products to users or other outside entities.

2 Care must be taken in drafting legislation to avoid proposing laws which conflict with existing conflict of interest laws, such as SEC prohibitions against stock trading based on "insider knowledge." The remote sensing satellite program conflict-of-interest rules should supplement and not supersede existing prohibitions.

Jerry Ostrov
11/4/80 (Revised)

Issue 12

I. Issue

To what degree should the legislation regulate the activities of the private sector operator?

II. Background

At private sector workshops held during the development of the transition plan, firms evidencing interest in Landsat recognized that some regulation was necessary, but expressed concern that regulation be kept to a minimum. Their concern presumably reflects the fact that any firm confronted with the costs and uncertainties of the Landsat program will want to be able to make corporate decisions in an environment of maximum flexibility. To a degree, similar concerns apply to an option 2 corporation, though, in the case of such a corporation, it is assumed that government assurances will provide the necessary inducement to attract investment.

The problem that arises is that much of the Landsat program will be governed by domestic and foreign policies which, by their very nature, will restrict the flexibility of the private sector operator, possibly to the point where private sector assumption of risk becomes impracticable. It is against this background that one must decide which policies applicable to the Landsat program are of sufficient importance to warrant statutory language and regulatory oversight. A glance at the list which follows indicates the magnitude of the problem. The list is divided into policies contained in international treaties and presidential directives, policies developed in-house within NOAA and policies required on grounds of national security.

(A) Policies contained in International Treaties and Presidential Directives.

- (i) Commitment to the principle of the exploration and use of outer space by all nations for peaceful purposes and for the benefit of all mankind. (Outer Space Treaty)
- (ii) Data and results from the civil space program will be provided the widest practical dissemination, except where otherwise prohibited by law, executive order or regulation.
- (iii) The United States will generally support non-discriminatory direct readout to foreign ground stations.

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- (iv) Pricing policies must be developed that are consistent for foreign and domestic users.
- (v) The U.S. will promote development of complementary nationally operated satellite systems so as to limit U.S. program costs, but protect against unwarranted technology transfer.

(B) Policies developed in-house within NOAA

Many of the policies which follow reflect the fact that the private sector operator, having obtained a contract with the Government, will enjoy a de facto monopoly or near-monopoly status in the satellite-based land remote sensing arena. The policies attempt to deal with this situation by ensuring that, on the one hand, the owner/operator does not take undue advantage of its position, and, on the other, that it satisfies requirements which are deemed to be in the public interest. The policies also reflect the fact that much of the support for the system will come from the Federal government and that, for the foreseeable future, the Federal government will continue to be the dominant user of the system.

- (i) Limitation of the value-added and information extraction activities of the owner/operator to demonstration, training, and market development.
- (ii) Legislatively established corporation: Limitation of non-remote sensing activities of the corporation so as to ensure adequately focused attention on space-based land remote sensing.
- (iii) Legislatively established corporation: Procurement of design and fabrication requirements through the competitive process and in compliance with small business and minority set-aside requirements.
- (iv) Provision of services that satisfy the needs of specified classes of non-Federal users and which are economically practicable from the standpoint of the owner/operator.
- (v) Provisions to ensure that certain users whose interests are deemed to be consistent with public policy are able to avail themselves of land remote sensing satellite services at an affordable price. (Unresolved as of 11/4/80.)

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- (vi) Profit sharing: rules governing the keeping of books, paper trails and apportionment of revenues and expenses such that profit sharing provisions can be satisfactorily implemented.
- (vii) Extraordinary remedies: rules specifying conditions under which services will be deemed inadequate and provision made for returning the system to government ownership.

(C) Policies relevant to national security

- (i) Maximum resolution of sensors.
- (ii) Overflight patterns.
- (iii) Compliance with existing national security requirements.

III. Alternatives and Conclusion

There are no real alternatives to the issue of whether policies important to the public interest should be included in the statute and reflected in regulatory oversight. PD 37 specifies that "all United States government earth oriented remote sensing satellite will require United States authorization and supervision or regulation." Such supervision or regulation can only be for the purpose of ensuring that U.S. policies are satisfied. The real question is which, if any, of the enumerated policies, are sufficiently benign, incapable of intelligent administration or so likely to stand in the way of private investment as to warrant exclusion from the statute. This is obviously a complex question which will likely be resolved only after the legislative process is in full swing. At this point, a good case can be made for each of the enumerated policies.