SR. No 0120

(E72-10311) DEVELOPMENT OF TECHNIQUES TO SIMPLIFY THE PROCESS OF INVESTIGATION AND ESTIMATE OF NATURAL RESOURCES IN A.C. Romero (Direccion de Cartografia Nacional, Caracas) Sep. 1972 15 p CSCL 08G G3/13

N73-13360

Unclas 00311

Development of techniques to simplify the process of investigation and estimate of natural resources in remote and relatively unexplored areas.

Dr. Adolfo C. Romero M.

Dirección de Cartografía Nacional

Ministerio de Obras Públicas

Edificio Camejo Esq. Camejo C.S.B

Caracas 101.

September 1972

Preliminar Report

Period: April 1971 to June 1972.

CORDIPLAN Oficina de Coordinación y Planificación Nacional, Palacio Blanco

Caracas- Venezuela.

PRELIMINARY REPORT
VEN 02

Principal Investigator: Dr. Adolfo C. Romero M.
SR-0120

According to projects during the years of 1970-1972. Several investigations have been made that will serve as a base for future studies using the imagery taken by Satellite-ERTS #1.

Prior to submission of proposals to NASA. The Development Commission for the South of Venezuela had already initiated studies in the area.

In addition to the mentioned studies, investigations had been carried out during the period April 1971-June 1972 concerning the following disciplines: Geology, Geography, Forestry & Cartography. In this same period the organizations developed a training program for their personnel in the Remote Sensing field: courses such as Interpretation of Radar Imagery, conducted in Philadelphia (Aeroservice Corporation) and the

Remote Sensing course in Panama, sponsored by the IAGS & Geological Survey with its program EROS (Earth Resources - Observation Systems). Shere taken by several members of the staff.

A brief resume of the activities conducted follows:

GEOLOGY

MINISTERY OF MINES AND HIDROCARBONS

Geology studies have been made utilizing the Radar Images conducted in regional phases to cover the entire area. At the present time these studies are underway based on conventional photographys of scale 1:50.000.

GEOMORPHOLOGY

MINISTERY OF MINES AND HIDROCARBONS

Compartive studies have been realized in an analitic and sinthesis level with conventional photography at a scale of 1:50.000, in 75 % of the area. Comparative studies have also been made in a comparison of the results obtained with the photography mentioned above and Radar Imagery at a scale

of 1:250.000 to 1:1.000.000 with the objective of gaining better interpretation of images at a small scale such as are expected of the ERTS # 1.

FORESTRY

MINISTERY OF AGRICULTURE

Elaborated studies are available based on Radar Imagery at a scale of 1:250.000 of the entire area. Investigations are being developed with a tendency toward symbolizing the interpretation of similar vegetation at a scale of 1:50.000 which will be used as a base for future interpretation of images from the ERTS #1.

CARTOGRAPHY

NATIONAL CARTOGRAPHY AGENCY

During the period of these investigations 2 specific types of data were obtained: Conventional photography at a scale of 1:50.000 using the WILD RC9 camera, other photography at a scale of 1:130.000. In addition to this material, radar imagery was obtained at a scale of 1:400.000

using the Good Year APS 102, 3,12 cm. system. Altimetry readings were also obtained with the imagery.

Preliminary maps will be prepared from the conventional photography at a scale of 1:100.000 covering 50 % of the area.

Mosaics at a scale of 1:250.000, 1:500.000 & 1:1.000.000 were prepared with the radar imagery to be used as base maps for the ERTS #1 Project in the absence of existing maps, prepared through conventional photogrammetric methods. Comparative studies will be made to determine the quality of radar imagery & Satellite imagery to be used in cartography.

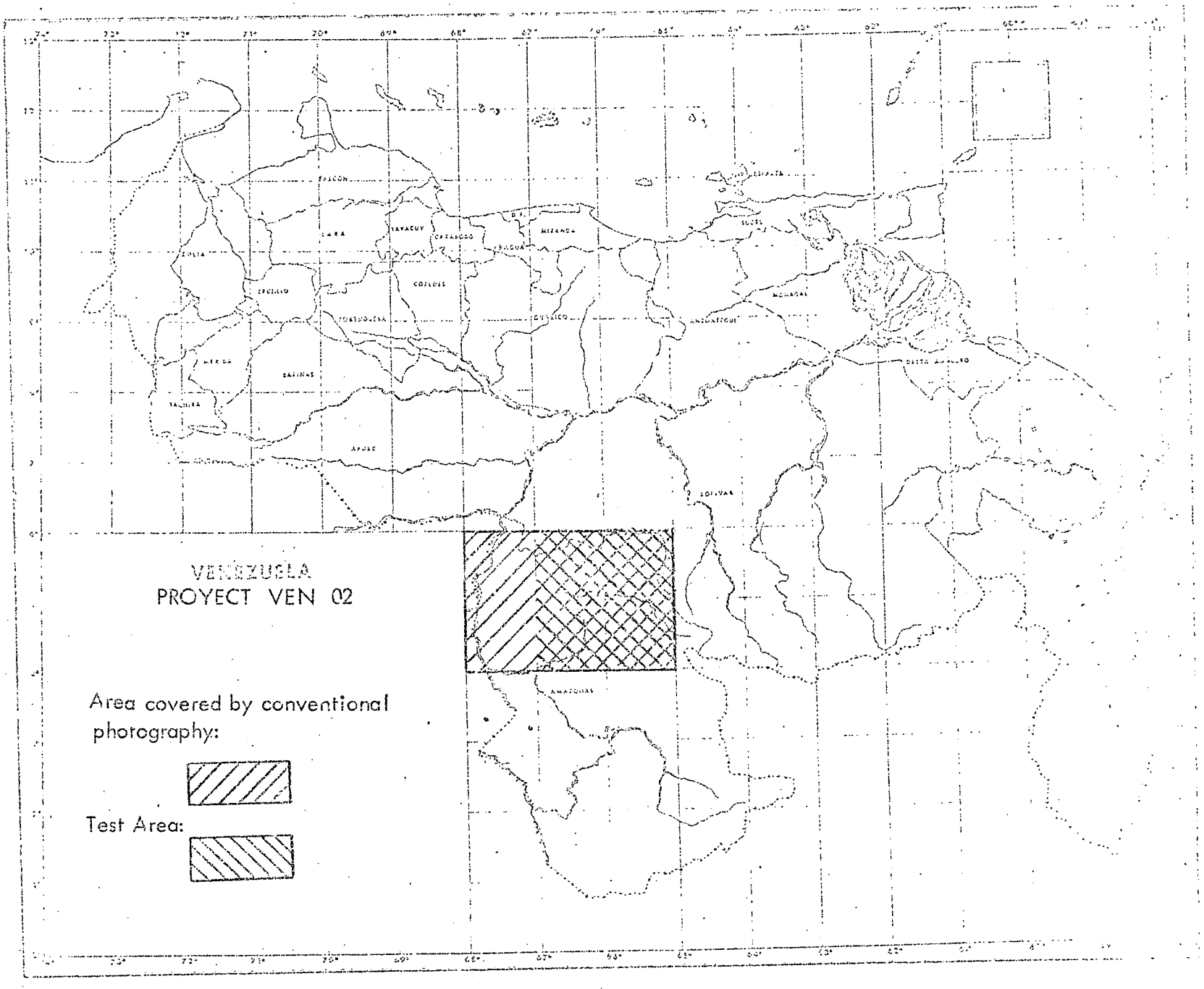
HIDROLOGY

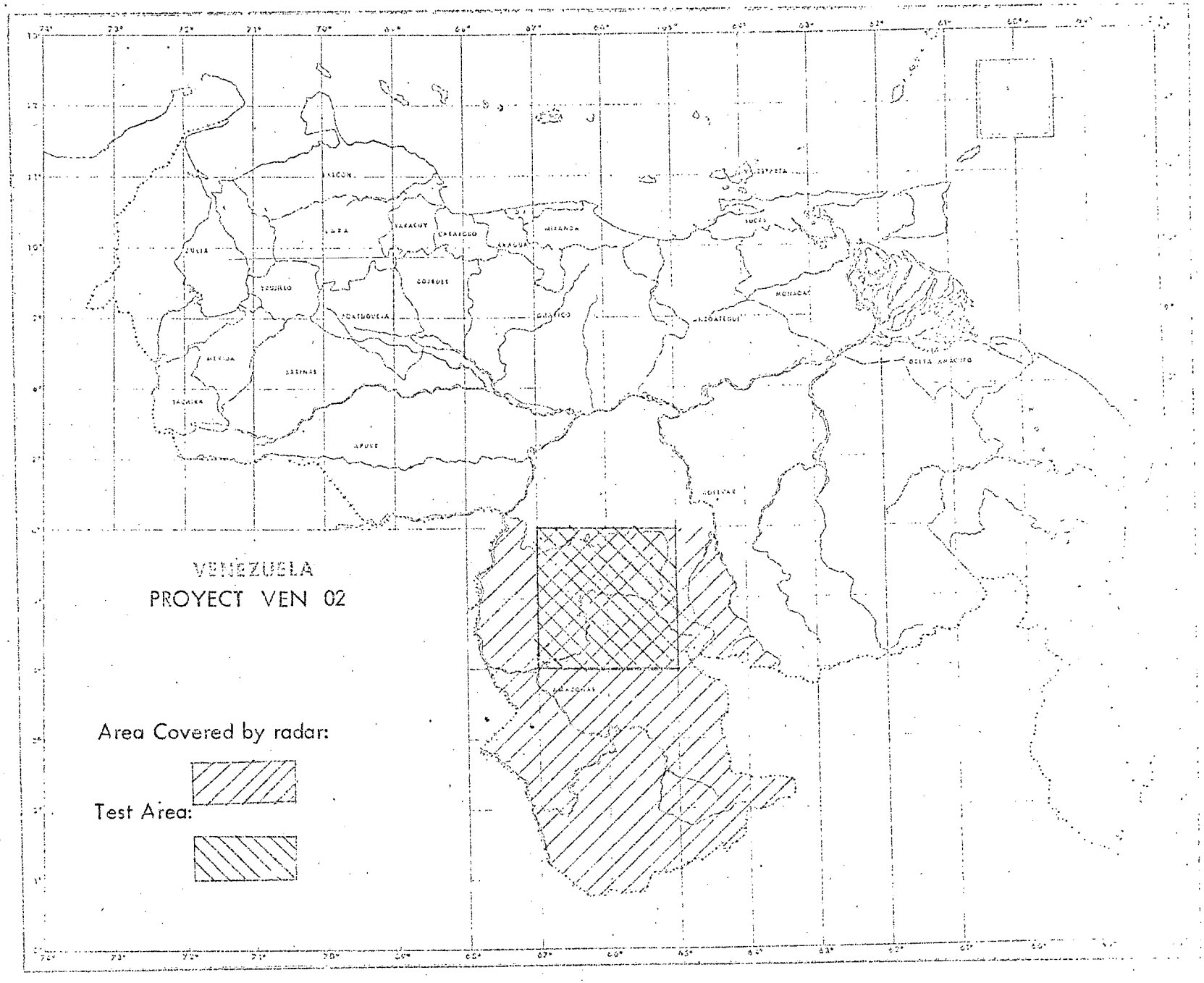
Hydrographic maps are being prepared using the radar imagery to detect the basins and sub-basins and the swampy areas and bodies of water.

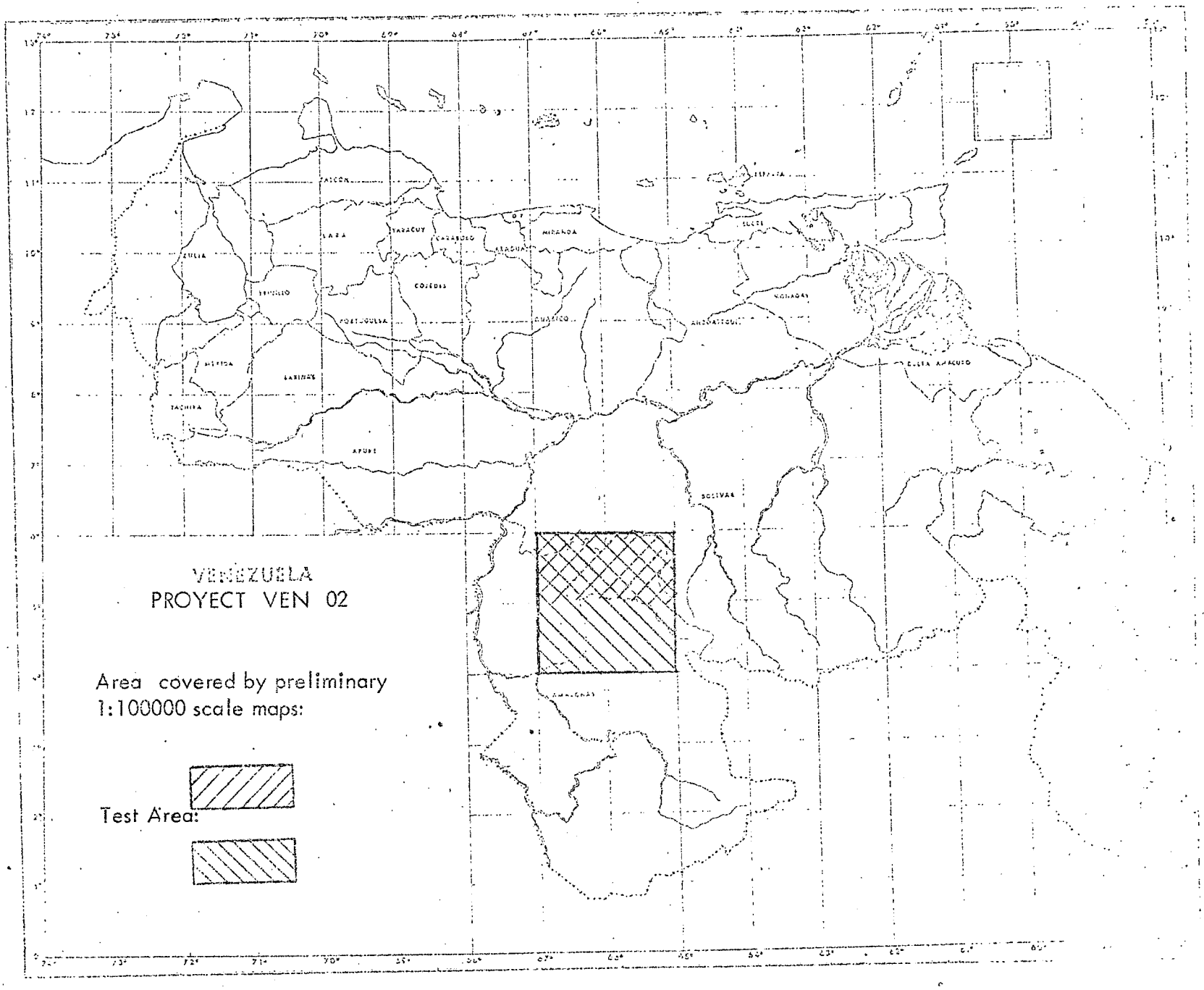
A program has been developed concerning the processing of data that includes the interpretation, collection

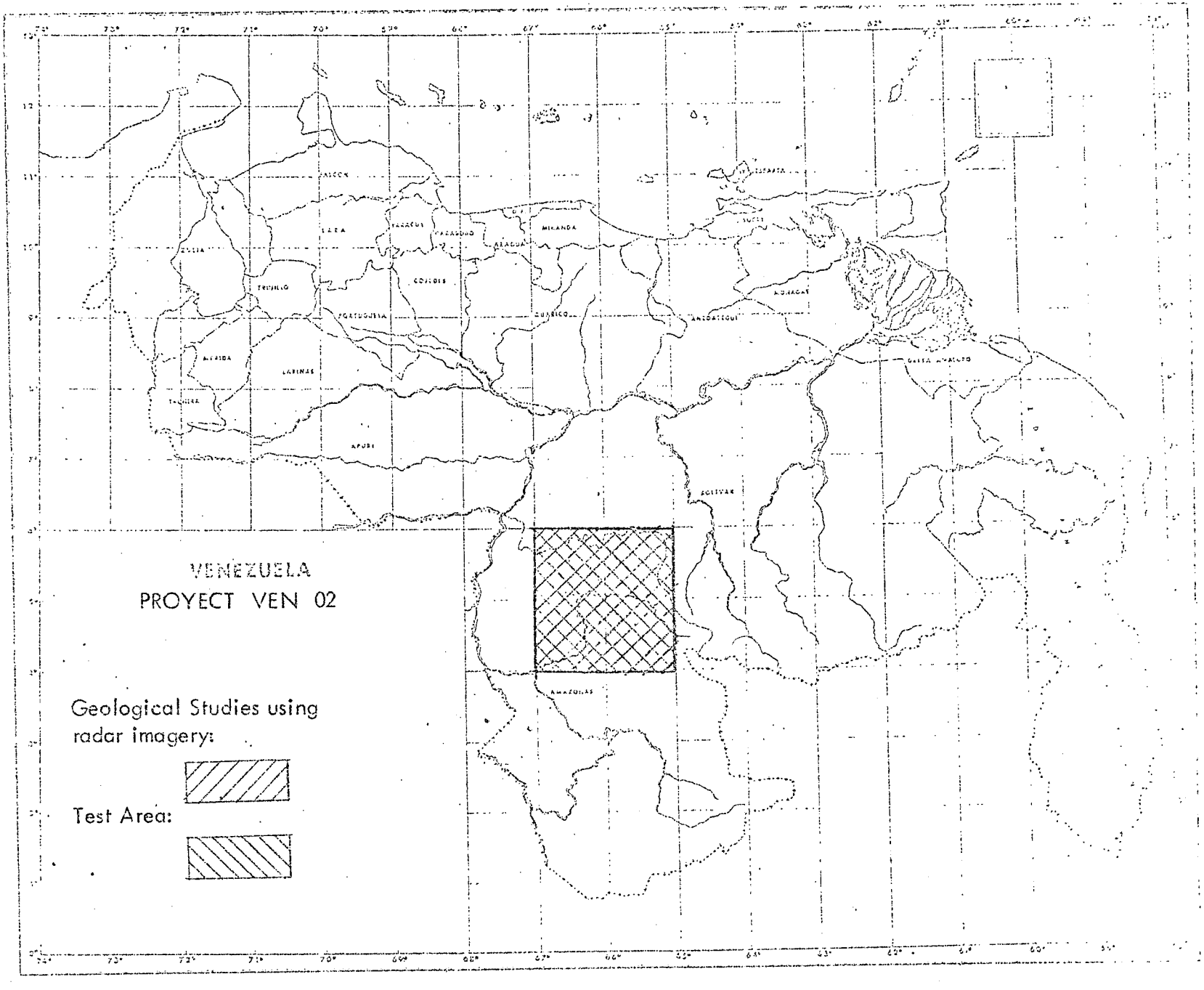
of data, including Horizontal and Vertical Control also - Tipical examples for the interpretation of radar imagery, conventional photography and multi-spectral images.

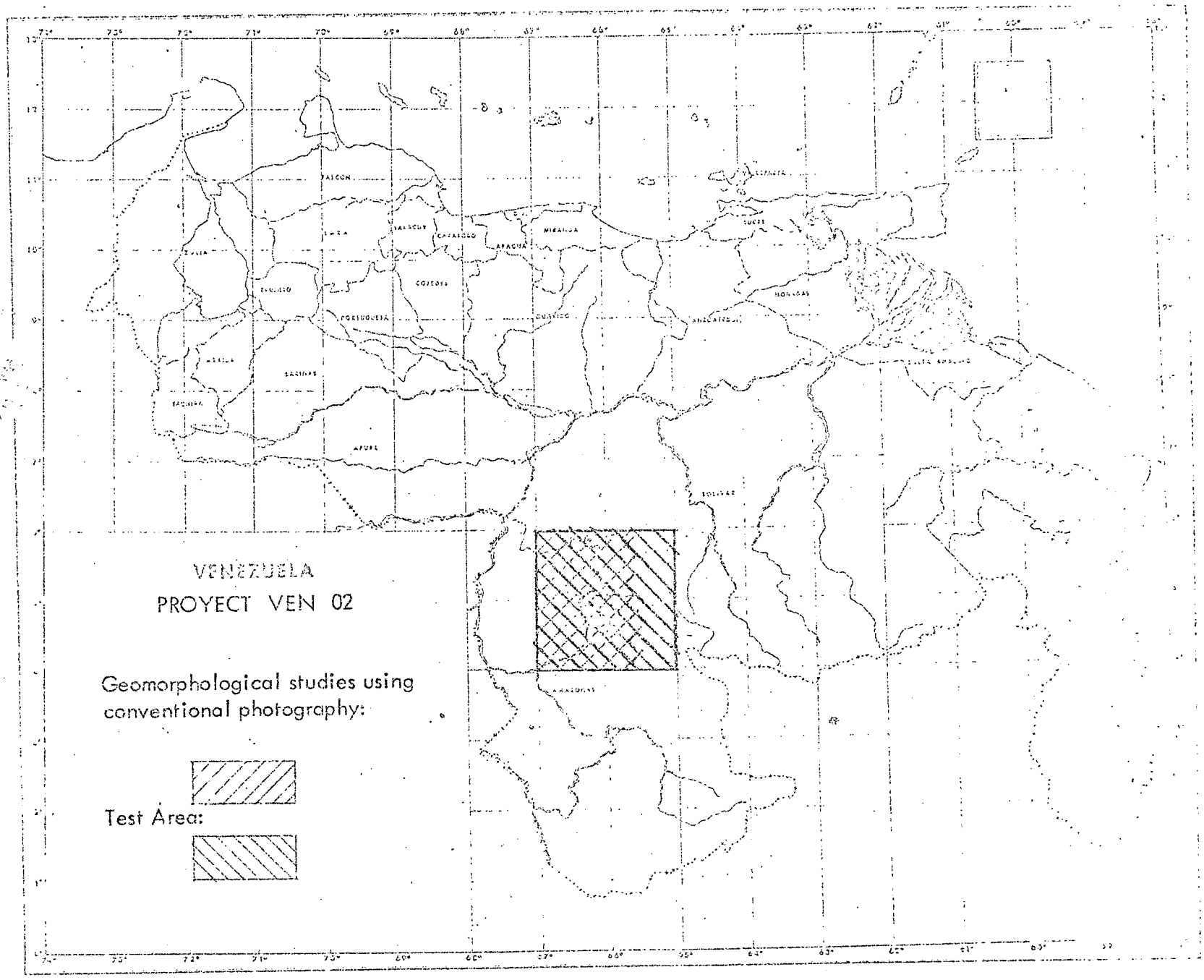
This program also include the monitoring of all - the existing information as Topomaps, thematics maps, - historical maps and new systems of archives for every - cartographic product concerning this project. Another - important aspect refers to the photographic process. A - Technical Team has been trained, and the necessary - equipment for this process is also available.

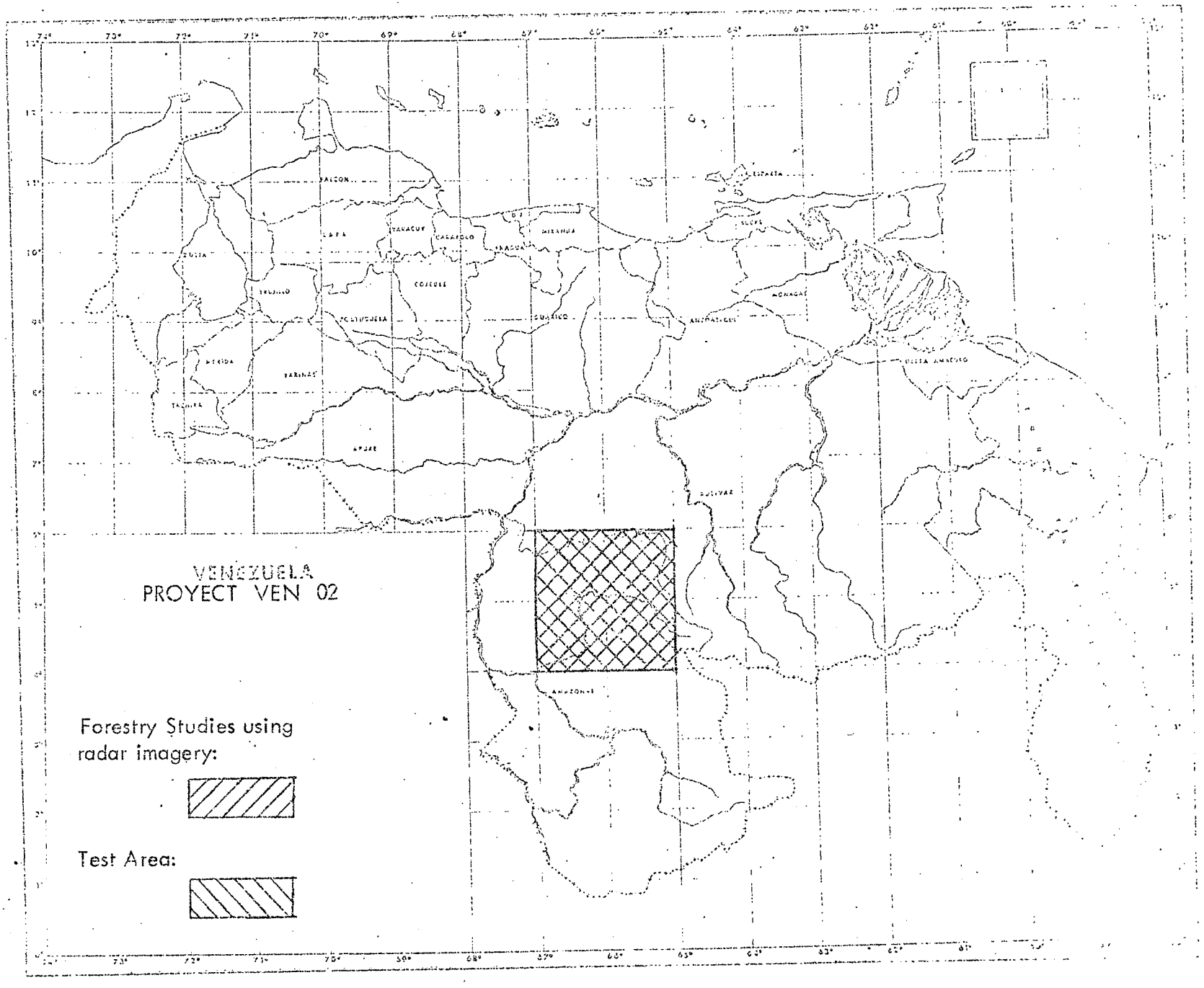

VENEZUELA
PROYECT VEN 02
Area covered by conventional photography:
Test Area:


VENEZUELA
PROYECT VEN 02
Area Covered by radar:
Test Area:


VENEZUELA
PROYECT VEN 02
Area covered by preliminary
1:100000 scale maps:
Test Area:


VENEZUELA
PROYECT VEN 02
Geological Studies using radar imagery:
Test Area:


VENEZUELA
PROYECT VEN 02
Geomorphological studies using conventional photography:
Test Area:


VENEZUELA
PROYECT VEN 02
Forestry Studies using radar imagery:
Test Area:

ANNEX TO THE PRELIMINARY REPORT.

In relation to your paper : "Provicions for participation in the NASA Earth Resources Technology Satellite A (ERTS-A) Project (Phase Approach, Part I (b), dated . We are informing you that our Agency has the ground control point data on the proposed test site.

We are sending you 13 control points identifies with its geographical and U.T.M coordinates and the corresponding imagery of the site.

Note: the #18 control point isn't very well identified on the imagery.

COORDENADAS U. T. M.

MERIDIANO CENTRAL 69 ZONA 19

		φ	λ	N	E
Punto	1	4° 35' 21"	67° 10' 13"	507537	702976
Punto	2	4° 18' 0"	66° 17' 54"	475830	799887
Punto	3	4° 36' 43"	66° 15' 17"	510381	804602
Punto	4	4° 52' 46"	66° 23' 6"	539914	790027
Punto	5	5° 12' 20"	66° 5' 52"	576152	821747
Punto	6	5° 29' 53"	65° 52' 13"	608646	846842
Punto	7	5° 2' 59"	65° 37' 42"	559147	873949
Punto	13	5° 56' 55"	65° 38' 17"	658666	872315

COORDENADAS U. T. M.

MERIDIANO CENTRAL 63 ZONA 20

		φ	λ	N	E
Punto	2	4° 18' 0"	66° 17' 54"	476091	133765
Punto	3	4° 36' 43"	66° 15' 17"	510620	138764
Punto	4	4° 52' 46"	66° 23' 6"	540295	124438
Punto	5	5° 12' 20"	66° 5' 57"	576256	156350
Punto	6	5° 29' 53"	65° 52' 13"	608502	181915
Punto	7	5° 2' 59"	65° 37' 42"	558766	208531
Punto	13	5° 56' 55"	65° 38' 17"	658230	207898
Punto	15	5° 38' 9"	64° 33' 47"	623195	326873
Punto	16	5° 25' 30"	64° 43' 9"	599936	309486
Punto	17	5° 16' 57"	64° 47' 52"	584212	300741
Punto	18	4° 57' 37"	64° 48' 50"	548572	298860
Punto	20	4° 49' 6"	65° 21' 3"	533042	239237
Punto	23	4° 33' 28"	65° 4' 5"	504128	270530

septiembre 1.972

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