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AGREEMENT
FOR
THE REPRODUCTION
OF
EXISTING AERIAL PHOTOGRAPHS
FOR
THE STUDY OF THE NATIONAL TOPOGRAPHIC MAPPING
OF
THE REPUBLIC OF MALI
IN
THE KITA AREA

January, 1999

Japan International Cooperation Agency Study Team

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This Agreement is made this ~~13th~~ 26th of January, 1999, between the JICA Study Team for the National Topographic Mapping of the Republic of Mali in the Kita Area, hereinafter referred to as "the Employer", and MAPS Geosystems, a company organized under the laws of the United Arab Emirates and having a registered office at Corniche Plaza 1, Sharjah, United Arab Emirates, hereinafter referred to as "the Contractor".

WITNESSETH

Whereas the Employer is planning to engage in activities in Mali and requires for such operations aerial photo reproduction services, and the Contractor desires to furnish such services.

Now, therefore, in consideration of the mutual promises, covenants and agreements herein contained the parties hereto do agree as follows:

1. SCOPE OF WORK

The Contractor shall make paper contact prints and enlarged photo prints from negative films to be supplied by the Employer according to the Specifications attached to this Agreement as Annex B. These services are hereinafter referred to as "the Work".

2. TERM OF AGREEMENT

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Subject to the provisions hereof, this Agreement shall commence on ~~13th~~ 26th of January, 1999 and shall continue until 28th of February, 1999.

3. SUPERVISION

The Employer will inspect contact prints, enlargement photos and any other final products to decide whether they fulfill the specifications set forth in Annex B of this Agreement. In case the Work or part of the Work are not acceptable the Supervisor will ask the Contractor to make necessary corrections.

4. FINAL PRODUCTS TO BE DELIVERED

The following final products will be delivered to the Employer in Mali before 28th of February, 1999.

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|------------------------------------|---------|
| 1) Contact prints (1/50,000 scale) | One set |
| 2) Enlarged photos | One set |
| 3) Quality check sheet | One set |

5. CONTRACT PRICE

The contract price is US\$19,000 (United States Dollars of nineteen thousand only) as shown on the Bill of Quantities attached to this Agreement as Annex A.

6. PAYMENT

30% of the contract price shall be paid by the Employer to the Contractor as the advance payment after the signing of the Agreement. The remaining 70% of the contract price shall be invoiced by the Contractor after the completion of the Work provided that the quantity of work stated in the Bill of Quantities has not been changed. If the quantity of the Work is changed necessary adjustment will be made in this final payment.

7. FORCE MAJEURE

Neither party hereto shall be liable for any loss, injury or damage out of any delay or failure of performance caused by circumstance beyond its reasonable control (hereinafter referred to as "Force Majeure") and any such delay or failure of performance due to any said Force Majeure (but not including the payment of money) shall not be deemed to be a breach of default in the performance of this Contract. If prevented from fulfilling the obligations set forth in this Agreement because of Force Majeure a party shall promptly notify the other party of such a problem and shall do all things reasonably possible to remove such Force Majeure and, if applicable, to reduce its costs and expenses chargeable to the other party and shall resume performance hereunder as soon as any Force Majeure is at an end.

8. GENERAL

8.1 Notices

Any notification under this Agreement shall be deemed to have been properly given or dispatched if made in writing and sent by registered mail, telex, or radiogram to the following addresses:

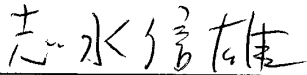
The Employer: JAPAN INTERNATIONAL COOPERATION AGENCY STUDY TEAM
For the Employer the Contract Responsible Officer is Mr. Nobuo Shimizu.

The Contractor: MAPS Geosystems
For the Contractor the Contract Responsible Officer is Mr. J.L.Hissette.

8.2 Arbitration

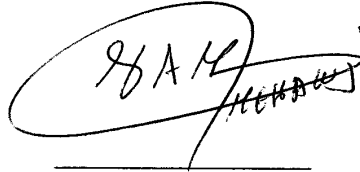
The parties hereby agree to submit every dispute arising in connection with this Agreement or its operation or the relation of the parties arising from it to arbitration by an arbitrator acceptable to the Employer and the Contractor.

For and on behalf of
Japan International Cooperation Agency
Study Team



Nobuo SHIMIZU

For and on behalf of
MAPS Geosystems



For Jean Louis Hissette



Annex A.

Bill of Quantities

Price Item	Unit Price	Quantity	Price
1. Contact Print	U.S.\$7.00	600 photos	U.S.\$4200.00
2. Enlarged photos	U.S.\$17.00	600 photos	U.S.\$14,400.00
3. Quality Check Sheets	Lump sum	Lump sum	U.S.\$400.00
Total			U.S.\$19,000.00

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Annex B

SPECIFICATIONS
FOR
THE REPRODUCTION
OF
EXISTING AERIAL PHOTOGRAPHS
FOR
THE STUDY OF THE NATIONAL TOPOGRAPHIC MAPPING
OF
THE REPUBLIC OF MALI
IN
THE KITA AREA

January, 1999

Japan International Cooperation Agency Study Team

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1. WORK

This photo reproduction work (hereinafter referred to as the Work) is schemed for the Study of the National Topographic Mapping of the Republic of Mali in the Kita Area. The reproduced photos will be used for photo interpretation purposes required for topographic map production.

2. SCOPE OF WORK

The following work shall be undertaken by the Contractor by using negative film of existing aerial photographs to be supplied by the Employer.

- (1) Production of one (1) set of contact prints
- (2) Production of one (1) set of enlarged photos
- (3) Preparation of one(1) set of Quality Check sheets

The Contractor shall execute the Work in accordance with the Specifications stipulated herein. The Work covered by the Specifications includes furnishing all technical staff, laborers, equipment and material.

3. TECHNICAL SPECIFICATIONS

3.1 Type of Photographs

Type of photographs to be reproduced shall be black and white panchromatic photographs. Contact prints and enlarged photos should be printed on photographic paper. Negative film is of 1/50,000 scale aerial photographs taken in 1995 over the Kita area in Mali.

3.2 Printing Paper

The type of photographic paper to be used for the reproduction work shall be of Kodak, Fuji or of equivalent manufacturer. The printing paper shall be handled and stored in accordance with the manufacturer's recommendations.

3.3 Processing

Before making final products, the Contractor shall make some test prints. All processed prints shall be substantially free of blisters, bubbles, inclusions, coating lines, stress or static marks, bar marks, pin holes, abrasions, streaks, strains and dying marks.

3.4 Quality Control

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The quality of printed photo images shall be inspected and the inspection results shall be compiled as quality check sheets.

4. FINAL PRODUCTS

The following final products shall be delivered to the Employer.

- | | | |
|-----|---------------------|-------|
| (1) | Contact prints | 1 set |
| (2) | Enlarged photo | 1 set |
| (3) | Quality check sheet | 1 set |

Negative films shall be back to PGRN in Mali.

5. INSPECTION OF THE WORK

The Employer will inspect the work carried out by the Contractor. While the Contractor is expected to execute the Work in accordance with the specifications stipulated herein some tolerance in this respect shall be allowable provided that intended purpose of the photographs is **not** impaired. The Work is deemed to have been completed after getting an approval of the Employer.

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**AGREEMENT
FOR
AERIAL PHOTOGRAPHY
FOR
THE STUDY OF THE NATIONAL TOPOGRAPHIC MAPPING
OF
THE REPUBLIC OF MALI
IN
THE KITA AREA**

This Contract made entered into the 13th of January, 1999 by and between the JICA Study Team, having its Mali Office of Direction Nationale de La Cartographie et de La Topographie Ministere de l'Urbanisme et de l'Habitat (hereinafter referred to as "DNCT") at Bamako, Mali and MAPS Geosystems in United Arab Emirates (hereinafter referred to as "the Contractor" which shall include its legal successors and assigns), having its principal office at DNCT , Bamako, Republic of Mali.

WITNESSETH that the parties covenant, promise, and agree each with the other as follows:

- (1) The Contractor agrees to do and complete the aerial photography of 10,600 square kilometers (hereinafter referred to as "the Works" in accordance with the terms, conditions and requirements of this Contract.

- (2) The JICA Study Team agrees to pay the Contractor in consideration of the fulfillment of the Works, the Contract Price in Japanese yen of 12,545.200(Japanese Yen of twelve millions five hundreds forty five thousands and two hundreds only) in accordance with the terms and conditions specified in the General Conditions.

It is agreed that the terms, conditions and requirements of the Contract shall prevail except to the extent that they are expressly modified or altered by this Contract.

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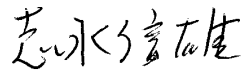
IN WITNESS WHEREOF, each of the parties hereto has caused this Contract to be executed in duplicate as of the date first above written by its duly authorized representative.

FOR AND ON BEHALF OF
MAPS Geosystems(United Arab Emirates)



For Jean-Louis Hissette
Director Buisiness Development

FOR AND ON BEHALF OF
THE JICA STUDY TEAM



Nobuo Shimizu

JICA Study Team
Co-Team Leader



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1.1 DEFINITIONS

The following words and expressions shall have the meaning herein assigned to them, except where the context otherwise requires:

- (1) The "JICA Study Team" shall mean the Employer and the person or persons assigned by ASIA AIR SURVEY CO., LTD. which are entrusted to carry out "The Study of the National Topographic Mapping of the Republic of Mali in the Kita area".
- (2) The "Engineer" shall mean Team Leader or members of the JICA Study Team for "The Study of the National Topographic Mapping of the Republic of Mali in the Kita area", who supervise the Work at the site or in other places in Mali where Contract has been carried out or is in progress to be carried out.
- (3) The "Study" shall mean "The Study of the National Topographic Mapping of the Republic of Mali in the Kita area" carried out by the JICA Study Team in cooperation with the Direction Nationale de la Cartographie et de la Topographie, Ministere de l'Urbanisme et de l'Habitat in the Republic of Mali.
- (4) The "Work" shall mean aerial photography to be done by the Contractor under the Contract, as a part of "The Study of the National Topographic Mapping of the Republic of Mali in the Kita area" under the Direction Nationale de la Cartographie et de la Topographie, Ministere de l'Urbanisme et de l'Habitat.
- (5) The "Contractor" shall mean any person, firm, or company whose tender has been accepted by the Engineer and approved by the JICA Study Team and shall include the Contractor's personnel, representative(s), and its legal successors and assigns.
- (6) The "Subcontractor" shall mean any person, firm, or company (other than the Contractor) named in the Contract for any part of the Work or any person to whom any part of the Contract has been sublet with the written consent of the Engineer, and shall include the Subcontractor's personnel, representative(s), and its legal successors and assigns.
- (7) The "Contract" shall mean the agreement between the JICA Study Team and the Contractor, and shall include the Letter of Intent, the Conditions of Contract, the General Specifications, the Technical Specifications, the Bill of Quantities annexed hereto or to be provided or approved by



the JICA Study Team, the Letter of Intent for the Contract, and such further documents that may be expressly incorporated in the Contractor.

- (8) "Contract Price" shall mean the sum stated in the Contract as the contract price.
- (9) "Bill of Quantities" shall mean the price schedule appended to or issued under the Contract.
- (10) "Unit Price" shall mean the unit price(s) quoted in the Bill of Quantities appended to the Contract.
- (11) "Specifications" shall mean the general and technical specifications or the specifications annexed to or issued under the Contract.
- (12) "Site" shall mean the place where the Work is required to be done under the Contract.
- (13) "Day, Week, Month, Year" shall mean calendar day, calendar week, calendar month and calendar year, respectively.
- (14) "Approval" or "Approved" shall mean approval or approved in writing by the JICA Study Team.
- (15) "Writing" shall mean any manuscript, typewritten, or printed statement under seal or signed by hand.
- (16) "Work Schedule" shall mean the work schedule appended to or issued under the Contract.

Words importing the singular only also include the plural and vice versa where the context requires. The fact that the words defined under this Clause are or not captioned in the Contract shall not affect their meaning.

1.2 CONTRACTOR TO INFORM HIMSELF FULLY

The Contractor who submits his cost proposal for the Work shall be deemed to have satisfied himself as to all the conditions and circumstances affecting the Contract Price, and to have fixed his prices according to his own view for these as no additional allowances, except as otherwise

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expressly provided, will afterwards be made beyond the Contract Price. The Contractor shall be responsible for any misunderstanding or incorrect information whatever obtained, except information in writing by the JICA Study Team.

1.3 EFFECTIVE DATE OF CONTRACT AND COMMENCEMENT OF THE WORK

The Contract shall become effective on the date it has been approved by the JICA Study Team and verified by JICA. The Contractor shall commence the Work upon receipt of the "Notice to proceed" which will be issued by the JICA Study Team.

1.4 MANNER OF EXECUTION

- (1) All the Work to be done under the Contract shall be executed in accordance with the Specifications, or where not specified therein, in accordance with such instructions and orders as the JICA Study Team may give.
- (2) If the Contractor shall, by written notice to the JICA Study Team within seven (7) days after receiving any decision, instruction or order of the JICA Study Team, intimate that he disputes or questions the decision for so doing, either party shall be at liberty to refer the matter to arbitration pursuant to Clause 1.23, Arbitration, but such an intimation shall not relieve the Contractor of his obligation to proceed with the Work in accordance with the decision, instruction, or order in respect of which the intimation has been given.

1.5 INFORMATION AND OFFICIAL PERMISSION

- (1) The JICA Study Team shall make the information available to the Contractor, for the purpose of performing the Work.
- (2) Official permission from the authorities concerned for the execution of the Work at the site shall be arranged by the DNCT from the request of the JICA Study Team and Contractor.

1.6 CONTRACTOR'S REPRESENTATIVE AND PERSONS

- (1) The Contractor shall make his own arrangements for the engagement of all engineers,

technicians and laborers necessary for the execution of the Work. The Contractor shall submit to the JICA Study Team for approval a complete list of principal staff showing names, functions, personal histories and periods of assignments prior to commencement of the Work.

- (2) The Contractor shall appoint one or more competent representative among the Contractor's engineers assigned to the Work to superintend the carrying out of the Work at the Site. The names, training and experience of the Contractor's representatives shall be submitted to the JICA Study Team for approval before they are appointed. The said representative, or if more than one shall be appointed, at least one of such representatives shall be present at the Site during all work period and working hours, and any order or instruction which the JICA Study Team may give to such representative of the Contractor shall be deemed to have been given to the Contractor by the JICA Study Team.
- (3) The Contractor shall be responsible for observation of all regulation and safety precautions imposed by labor legislation and authorities.
- (3) The JICA Study Team shall be liberty by notice in writing to the Contractor to object to any representative or other persons employed by the Contractor in the execution of the Work shall, in the opinion of the JICA Study Team, misconduct himself or being incompetent or negligent or being sick, and the Contractor shall remove such person or persons from Work and provide an acceptable replacement(s) at the Contractor's expense.

1.7 WORKING DAY AND HOURS

The Contractor shall carry out the Work at the Site continuously during the normal working hours generally recognized in Mali. The Contractor may, with his arrangement, carry out the Work in other times, if it shall be practicable in the circumstances for work to be so done.

1.8 EQUIPMENT, MATERIALS AND FACILITIES TO BE PROVIDED BY THE CONTRACTOR

The Contractor shall at its own expense supply and provide all the equipment, materials, laborers and other things of every kind required, for the execution and completion of the Work.

1.9 PROGRAM TO BE FURNISHED

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- (1) The Contractor shall submit to the JICA Study Team for approval, his proposed time schedule and field/indoor operations programs for each section of the Work. After approval by the JICA Study Team of such time schedule and field/indoor operations programs, the completion time for the Work stipulated in the same time schedule shall be considered as the "Guaranteed Time for Completion of the Work", and the Contractor shall adhere to the order of procedure, method and time schedule stated unless he obtained the written permission of the JICA Study Team to vary such order or method or time schedule.
- (2) Such time schedule and field/indoor operations programs shall be supplemented by the Contractor by monthly progress reports indicating the actual state of progress of all work times during the course of the Work. The form and substance of such monthly reports shall be satisfactory to the JICA Study Team.
- (3) In the course of the Work, any time the JICA Study Team calls a meeting with the Contractor, the Contractor and/or his representative(s) shall at all times and at his own expense attend the meeting and shall report all actual progress of the Work.

1.10 INSURANCE

- (1) The Contractor shall, at his expense, effect accident and injury insurance for engineers, technicians and laborers employed by him for the execution of the Work, and shall keep the JICA Study Team free from any claim for compensation of such accident and injury.
- (2) The Contractor shall at his expense insure the equipment, materials and facilities to be provided by him and keep each part thereof insured for its full value against loss, damage and fire.

1.11 FORCE MAJEURE

- (1) If either party is temporarily unable by reason of force majeure on the law or regulation of Mali to meet any of its obligation under the Contract, and if such party gives to the other party written notice of the event within seven (7) days after its occurrence, such obligations of the party as it is unable to perform by reason of the event shall be suspended as long as the inability continues.
- (2) The neither party shall be liable to the other party for loss or damage sustained by such other

party arising from any event referred to in Clause 1.11 (1) or delays arising from such event.

- (3) The term "Force Majeure" as employed herein shall mean Acts of God or natural calamities, strikes, lock-outs, or other industrial disturbance, acts of the public enemy, war, blockades, earthquakes, storm, lightning, floods, wash-outs, civil disturbances, explosions and any other similar events, beyond the control of either party and which by the exercise of such diligence neither party is able to overcome.

1.12 TERMS OF PAYMENT

- (1) The JICA Study Team shall make payment for the Work to the Contractor in the following manner.

- (a) The Contractor shall submit an invoice that shall be ascertained to the unit prices and their work quantity specified in the Bill of Quantities and approved by the JICA Study Team.

- (b) Advance Payment (30 % of the Contract Price)

The Contractor shall submit an invoice of advance payment (thirty percent (30 %) of Contract Price) after the air crew team arrives to the Site. An advance payment shall be paid within thirty (30) days after the JICA Study Team received an invoice and performance guarantee document from the Contractor.

If the contractor could not complete photography of the whole entire area within the stipulated time period, JICA Study Team shall have a right to extend the time period or order to terminate the contract. If the contract is terminated, the payment is to be adjusted on pro-rate to the completed portion of the area. If the area less than 30 % is completed, then the contractor shall return the exceeded portion of the advance payment.

- (c) Final Payment (70 % of the Contract Price)

The JICA Study Team shall pay the remaining seventy- percent (70 %) of the Contract Price within thirty (30) days after issuance of the certificate of Completion of the Work and the JICA Study Team received the invoice of final payment from the Contractor.

- (2) No extra payment in respect of overtime, holiday work, additional equipment, materials and facilities, or special conditions of hardship shall be claimed by the Contractor beyond the Contract Price, unless such payment shall have been authorized in writing by the JICA Study Team to the extra cost concerned being encountered.

- (a) No adjustment of the Contract Price shall be made even if the actual quantities completed are more than the quantities shown on the Bill of Quantities in the Contract. In case that an increase or decrease in the quantities shown on the Bill of Quantities are forecasted in the course of execution of the Work, quantity adjustment shall be timely made between the JICA Study Team and the Contractor within the Contract Price.
- (b) Unit prices stated in the Bill of Quantities shall be fixed and shall be used in determining any adjustment within the Contract Price where applicable.
- (c) Any fluctuation in the price of wages, materials or any other items shall not be the subject of any adjustment.

1.13 TAXES AND RELATED CHARGES

All income and other taxes, levies, impositions, deductions, charges, fees and similar assessments whatsoever imposed, assessed, levied or collected by the Government of the Republic of Mali, or any subdivision thereof or any tax authority therein, upon the Contractor and his staff, shall be paid and/or borne by the Contractor.

1.14 VARIATIONS AND OMISSIONS

- (1) The Contractor shall not alter any of the Work except as directed in writing by the JICA Study Team. The JICA Study Team shall have full power, from time to time, during the execution of the Contract, to direct the Contractor to alter, amend, omit add to or otherwise vary any of the Work, by notice in writing, and the Contractor shall carry out such variations. In case the JICA Study Team directs, on the spot, the Contractor to change areas to be surveyed area from the originally proposed areas, the Contractor shall at that instance obey such directions and later obtained written confirmation from the JICA Study Team.
- (2) If decrease the Work ordered by the JICA Study Team, such orders shall no constitute any ground for claim for damage or loss of anticipated profits on the Work. All additional work, if any, shall be performed with the same material and workmanship as employed for works of similar character in the original work as far as they applicable hereto.
- (3) If the Contractor requests increase in the Work, no additional budget will be issued even if there are charges in the scope of work proposed by the Contractor.

1.15 CONTRACTOR'S DEFAULT

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- (1) If the Contractor shall neglect to execute the Work diligently and expeditiously or shall refuse or neglect to comply with any reasonable instructions or other given in writing by the JICA Study Team in connection with the Work, or shall contravene the provisions of the Contract, the JICA Study Team may give notice in writing to the Contractor to make good failure, neglect or contravention complained of.
- (2) Should the Contractor fail to comply with the notice within a reasonable time from the date thereof, then and in such case, the JICA Study Team shall be at liberty to employ other workmen and forthwith execute such part of the Work as the Contractor may have neglected to so, or, if the JICA Study Team shall think fit, it shall be lawful for him, without prejudice to any other rights he may have under the Contract, to make the work wholly or in part of the Contractor's hands and re-contract with any other person or persons to complete the Work or any part thereof.
- (3) The JICA Study Team shall be entitled to retain and apply any balance which may be otherwise due from him to the Contractor, or such part thereof as may be necessary to payment of the cost of executing the said part of the Work or completing the Work as the case may be. If the cost of completing the Work or executing part thereof as aforesaid shall exceed the balance due to the Contractor, the Contractor shall pay such excess upon request in writing by the JICA Study Team.

1.16 REJECTION

At any time before the Work is accepted by the JICA Study Team, the JICA Study Team shall decide that any work done by the Contractor is defective or not in accordance with the Contract or that the Work or any portion thereof is defective or do not fulfill the requirements of the Contract, then the Contractor shall, with dispatch of personnel with equipment at his own expense, make good the defects so specified. In case the Contractor shall fail to do so, the JICA Study Team may, provided he does so without undue delay, take at the cost of the Contractor

1.17 TIME FOR COMPLETION

- (1) The whole shall be completed within the time guaranteed by the Contractor or such extended time as may be allowed under the following paragraph.

- (2) The Contractor shall not be held responsible for failure to carry out his obligations, in case of force majeure, stipulated in Clause 1.11, which should be notified by him in writing to the JICA Study Team within seven (7) days of the commencement of force majeure condition. Depending on the submittal of satisfactory evidence and if the JICA Study Team accepts the existence of force majeure conditions, the JICA Study Team will grant extension of the Guaranteed Time for Completion of the Work sufficient to compensate for the delay due to force majeure without penalty.

1.18 DELAY IN COMPLETION

If the Contractor fails to complete the Work in accordance with the Contract within the time specified by the Contract, these shall be deducted from the Contract Price as and for liquidated and ascertained damages a sum of money equal to one tenth of one percent (0.1 %) of the Contract Price for each day between the Guaranteed Time for Completion of the Work and the actual date of completion. Such deduction shall be in full satisfaction of the Contractor's liability for the said failure.

The JICA Study Team may request the Contractor to employ additional labor or use additional equipment and materials, and the Contractor shall do so at his expense in case a delay in the completion of the Work expected.

1.19 SUSPENSION OF THE WORK

The Contractor shall, on the written of the JICA Study Team, suspend the progress of the Work or any part thereof for time or times and in such manner as the JICA Study Team may consider necessary and shall doing such suspension properly and secure the Work so far as is necessary in the opinion of the JICA Study Team.

All expenses incurred by the Contractor by reason of suspension to the Work by the JICA Study Team will be at the sole responsibility of the Contractor if the suspension is:

- (a) Otherwise provided for in the Contract, or
- (b) Necessary for the proper execution on the Work or by reason of weather condition affecting the safety or the quality of the Work or by some defaults on the part of the Contractor, or
- (c) Necessary for the safety of the Work or any part thereof.



1.20 CERTIFICATE OF COMPLETION OF THE WORK

As soon as possible, after the whole Work has been satisfactorily completed, the JICA Study Team shall issue a Certificate of Completion of the Work after receiving a written application thereof from the Contractor. Upon issuance of such Certificate of Completion of the Work, the Contractor shall cease to be under further obligation under the Contract.

1.21 BANKRUPTCY

If the Contractor shall become bankrupt or insolvent or have a receiving order made against him, or compound with his creditors, or being a corporation commence to be wound up, not being a member's voluntary winding up for the purpose of amalgamation or reconstruction, or carry out its business under a receiver for the benefit of its creditors or any of them, the JICA Study Team shall be at liberty:

- (1) To terminate the Contract forthwith by notice in writing to the Contractor or to the receiver, or liquidator, or to any person in whom the Contract may become vested, and to act in the manner provided in Clause 1.15, Contractor's Default, as though the last mentioned notice has been the notice referred to in such Clause and the Work has been taken out from the Contractor's hand, or
- (2) To give such receiver, liquidator or other person the option of carrying out the Contract subject to his providing of a guarantee for the due and faithful performance of the Contract up to an amount to be agreed.

1.22 ASSIGNMENT AND SUBLETTING OF THE CONTRACT

The Contractor shall not, without the prior consent in writing of the JICA Study Team, assign or transfer the Work or the benefits or obligations thereof or any part thereof to any other person.

The Contractor shall not, without the prior consent in writing of the JICA Study Team that shall not be unreasonably withheld, sublet the Contract or any part thereof or make any subcontract with any person or persons.

Any such consent, if given, shall not relieve the Contractor from his obligations under the

Contract. The subcontractor shall be regarded as employee of the Contractor. The Contractor shall be solely responsible for the performance of the Subcontractor and for all payments to the subcontractor.

1.23 ARBITRATION

- (1) If any dispute or difference of any kind whatsoever shall arise between the JICA Study Team and the Contractor in connection with the interpretation or application of the Contract, it shall be settled as much as possible by amicable arrangement between both parties. If such arrangement cannot be realized, the dispute or difference shall be settled by arbitration as provided herein.
- (2) All question, disputes or differences arising out of or in relation to the interpretation of the Contract which cannot be settled by mutual accord shall be submitted to a committee for arbitration consisting of three arbitrators, one to be nominated by the JICA Study Team, another by the Contractor and the third as chairman by the two arbitrators mentioned above, and shall be finally settled in conformity to the rules and procedures of conciliation and arbitration of the Japan Commercial Arbitration Association. Any decisions, opinion, direct, both parties shall obey certificate or valuation given by the arbitrators and be final.

1.24 NOTICE AND CORRESPONDENCE

Any notice to be given to the Contractor shall be served by sending the same by post to or leaving the same at the Contractor's principal place of business or to the address of his representative at the Site. Any notice to be given to the JICA Study Team shall be served by sending the same by post to or leaving the same at the Team's address as stated in the Contract.

1.25 DOCUMENTS

- (1) All correspondence, figures, drawings and other documents shall be made in English and in the metric system.
- (2) The several documents have to be taken as mutual evidence of one another, but in case of

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ambiguities or discrepancies, the same shall be adjusted in accordance with the provisions of Clause 1.23 hereof.

1.26 INSPECTION OF THE WORK

The JICA Study Team shall at all times have access to the Work wherever it is in preparation or in progress, and the Contractor shall provide necessary facilities for such access and inspection at Contractor's expense.

Where the Specifications require any work to be specially tested or approved, the Contractor shall give the JICA Study Team timely notice of his readiness for inspection and, if the inspection is by an authority other than the JICA Study Team, of the date fixed for such inspection.

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**SPECIFICATIONS
 FOR
 AERIAL PHOTOGRAPHY
 FOR
 THE STUDY OF THE NATIONAL TOPOGRAPHIC MAPPING
 OF
 THE REPUBLIC OF MALI
 IN
 THE KITA AREA**

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1. GENERAL SPECIFICATIONS

1.1 DESCRIPTION OF WORK

1.1.1 Work

This aerial photographic work (hereinafter referred to as "the Work") is a part of 1:50,000 scale topographic mapping. The photographs will be used for "The Study of the National Topographic Mapping in Kita area in the Republic of Mali" (hereinafter referred to as "the Project"). The Work includes the aerial photography and development films and paper printing under this Contract.

1.1.2 Location

The subject area of the Work is areas of Kita City and its surrounding, approximately 200 km to the west from Bamako, the capital of Mali. The Study area is approximately 31,000km² including Kita circle and surroundings. The area corresponds to the area of the existing 1:200,000 scale map sheets of "Kita", "Sirakoro" and "Bafing-Makana" and the total area to be covered by the aerial photography shall be approximately 10,600km² in the Study area. The area is accessible by 6 hours drive from Bamako (Refer to Figure 1 "Location Map").

1.2 SCOPE OF WORK

1.2.1 Scope

The following are the Scope of Work under this Contract:

1. Aerial photography	1:50,000 scale 10,600km ² Black/white
2. Contact prints	2sets
3. Two times enlargement prints	1set
4. Flight index	3sets
5. Flight report	lump sum
6. Quality control	lump sum

Figure 2 "Aerial Photography plan" show the areas, location and routes of the above-described activities.

The Contractor shall execute the Work in accordance with the General Specifications and the Technical specifications stipulated herein. The Work covered by the Specifications includes furnishing all technical staff, labors, materials, equipment and supplies required to perform the Work.

1.2.2 Purpose

The Work covered by this Specification is aerial photography of approximately 10,600km² and processing and printing of the aerial photographs under this Contract. The results will be used for "The Study of National Topographic Mapping in Kita area of the Republic of Mali".

1.2.3 Period

The Contractor shall complete the work and submit negative films of the aerial photographs, Index maps, prints and flight report before the 28th of February 1999.

1.2.4 Supervision

The Work shall be supervised by the JICA Study Team and his Representatives. The supervision will be approval of the operations planning, methods, equipment and materials, control of accuracy and progress, and confirmation and acceptance of the results.

1.3 PLAN OF AERIAL PHOTOGRPHY AND REPORTS

1.3.1 Aerial photography plans

The plans and schedules shown on the attached figures and tables and described herein are tentative and presented for the purpose of obtaining the comparative Tenders.

The Contractor shall submit his detailed aerial photography plan and schedules to the JICA Study Team for approval, prior to the commencement of

the Work. The Contractor's work schedules may be adjusted by the JICA Study Team from time to time, if required, in accordance with the new findings obtained during the Work.

The approved work schedules shall be monitored and kept updated by the Contractor throughout the Contract period. All revisions shall be accompanied by a detailed explanation of the reasons for such changes.

1.3.2 Progress Report

The Contractor shall submit three (3) copies of the monthly progress report on the progress of the Work during the preceding month in a form furnished by the JICA Study Team by the fifth (5) days of the next month or at any time designated by the JICA Study Team.

The report shall show the percentage of performed progress during the preceding month and the total percentage of completion as of the date of the reporting.

The report shall include the following matters:

- 1) Progress of the Work;
- 2) Number of technical staff and laborers engaged in the Work on daily basis;
- 3) Equipment and apparatus used for the aerial photography, film processing;
- 4) Finding;
- 5) Accident; and
- 6) Other necessary data and information required by the JICA Study Team.

1.3.3 Aerial Photographs, Maps and Survey Data

The Contractor shall submit all the aerial photographs, index maps, data and reports to the JICA Study Team in accordance with the provisions stipulated in the Technical Specifications.

The aerial photographs and related data to be submitted by the Contractor to the JICA Study Team shall be the property of the JICA Study Team.

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The expenses for the reporting shall be included in the unit prices of various items shown in the Bill of Quantities and/or stipulated in the Technical Specifications so that no separate payment for reporting will be made.

1.4 MATERIALS AND EQUIPMENT

All the materials and equipment required for the aerial photography, film processing and for the completion of the Work shall be prepared by the Contractor as soon as practically possible after the signing of the Contract or issuance of the letter of Intent or Notice to proceed.

The Contractor shall submit, for approval of the JICA Study Team, catalogs and other descriptive data of the aerial photographic equipment designated by the JICA Study Team. All the materials and equipment will be subject to inspection or tests by the JICA Study Team at any time both off-site and on-site as deemed necessary.

All expenses such as the costs of fuel, lubricant, operators and consumable entailed by the use of equipment during the Contract period shall be borne by the Contractor.

1.5 VARIATIONS

The plans and schedules shown on the attached figures and tables and described herein are tentative and presented for the purpose of obtaining the comparative Tenders. The definite location and boundaries of the aerial photography will be fixed by the JICA Study Team taking the findings and conditions encountered in the progress of the Work into consideration. However, the total aerial photography areas will not be changed.

Quantities shown in the Bill of Quantities attached to the Agreement may be changed without changing the unit prices quoted by the Contractor and within the Contract Price originally agreed between the JICA Study Team and the Contractor.

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2. TECHNICAL SPECIFICATIONS

2.1 GENERAL

1) Area

The area to be covered by taking aerial photographs at a scale of 1:50,000 is approximately 10,600km². The aerial photography areas are shown in Figure-2 "Aerial Photography Plan". The detailed proposed areas for aerial photography are shown on the attached 1:200,000 scale topographic maps (totally 5 maps).

2) Outline of the Work

The Work to be carried out by the Contractor is 1:50,000 scale aerial photography of 10,600km².

3) Plan of Operation

A plan of operation with a time schedule and the copy of flight plan indicated on 1:200,000 scale topographic maps shall be submitted by the Contractor to the JICA Study Team for his approval prior to the commencement of the Work

2.2 AERIAL PHOTOGRAPHY

1) Area and Scale

The area to be covered by the aerial photography shall be 10,600km² as shown in Figure 2 "Aerial Photography Plan". The scale of the aerial photographs shall be 1:50,000.

2) Type of Photographs

Black and white panchromatic photographs shall cover the whole area stereoscopically with a quality and precision suitable for the photo interpretation.

3) Camera

The camera to be used for the aerial photography shall be Zeiss RMK-15/23 or Leica/Wild RC-10 or equivalent, and has a calibrated focal length between 150 mm and 155 mm.

4) Camera Calibration

A valid calibration certificate of the aerial camera to be used shall be submitted to

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the JICA Study Team before the commencement of the aerial photography.

5) **Flying Direction**

The direction of flight lines will be east-west along the area except northern part of the project area (Diema 1:200,000) as shown in Fig. 2 "Aerial Photography Plan".

6) **Overlap and Sidelap**

The overlap and sidelap between successive exposures in each strip shall be $55 \pm 5\%$ and the sidelap between adjacent strip shall be $10 \pm 5\%$.

7) **Crab and Tilt**

Crab shall not exceed 5° when measured between the base line and a line parallel to the frame of the negative, nor create stereoscopic gaps in the photography.

8) **Conditions of Aerial Photography**

Cloud and dense cloud shadow or smoke shall not lie over the principal point of any photograph or its homologues in adjacent photographs. Nor shall any single mass of cloud and dense cloud shadow or smoke obscure more than three percent (3%) of the total area of any negative. Nor shall the aggregate of cloud, dense cloud shadow or smoke obscure more than five percent (5%) of the total area of negative.

Aerial photography shall only be accepted when the altitude of the sun is higher than 25 degrees.

9) **Aerial Film**

The type of aerial film to be used for the aerial photography shall be Kodak Double X, Aero-graphic 2405 or equivalent. The Film should be handled and stored in accordance with the manufacturer's recommendation.

10) **Processing**

All processed negatives shall be substantially free of blisters, bubbles, inclusions, coating lines, stress or static marks, bar marks, pin holes, abrasions, streaks, strains and dying marks.

Some tolerance in this respect shall be allowable where processing has to be carried

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out in the standard conditions, provided the intended purpose of the negatives is not impaired.

11) **Documentation and Annotation**

a) **Film Annotation**

The following information shall be supplied as leaders at the start and the end of each film:

Start or end (as appropriate)	Example
1. Project name	NTMK PROJECT
2. Client name	JICA/DNCT
3. Film number	S1-XXXX
4. Date of photography	199X, XX, XX
5. Effective negatives number and run number	S1 XXXX-XXXX
6. Approximate scale of photography	1:XX,XXX
7. Calibrated focal length of the lens	f=XXX.XX
8. Contractor's name	XXXXXXXXXXCo., Ltd.

b) **Negative Numbering and Annotation**

Numbering of negatives shall be carried out using heat foil or indelible ink. The number shall be printed in a near and clearly legible type.

Each film shall be provided with the following annotation which shall appear on the prints:

	Example
1. Project name	NTMK PROJECT
2. Contractor identification	XXXXXXXX
3. Client name	JICA/DNCT
4. Year, month and day of aerial photography	199X, XX, XX
5. Flying altitude above mean sea level or ground level or nominal level	XXXm
6. Scale of photography	1:XX,XXX
7. Focal length of the lens	f=XXX.XX

c) **Processing Film**

Each processed film shall be supplied in roll form on a spool and in a metal or plastic container as supplied by the film manufacturer.

The outside of each film container shall bear the following information:

	Example
1. Project name	NTMK PROJECT
2. Client name	JICA/DNCT
3. Film number	S1-XXXX
4. Date of photography	199X.XX,XX
5. Effective negative number and run number	S1-XXXX-XXXX
6. Scale of photography	1:XX,XXX
7. Contractor's name	XXXXXXXXXX Co., Ltd.
8. Focal length of the lens	f=XXX.XX

d) **Flight record and Film Report (Appendix 2 Aerial Photography Log)**

A report shall be attached to each film, giving the following information:

	Example
1. Film number	C1-XXXX-XXXX
2. Camera type or number, lens number, filter type and magazine number or cassette and cassette hold unit number	RC-20,XXXXXXXXX AV,XXX,XXX
3. Film type and manufacturer's emulsion number	KODAK DOUBLE X
4. Lens aperture and shutter speed	Open, 1/250
5. Date of photography	199X,XX,XX
6. Start and end time for each run in local time	S1 12:05-12:20
7. Negative number of all of the photographs	S1 XXXX-XXXX
8. Indicated flying height	2,890m
9. Computed flying height above sea level	3,120m
10. Scale of photography	1:XX,XXX
11. Outside air temperature	-20°C
12. Weather conditions; clouds, visibility, turbulence	Fair, Ci 5%, Clear, XX
13. Date of processing	199X.XX.XX-XX,XX
14. Developer and dilution	XXXXXXXXX
15. Time and temperature of development or film transport speed	XX.XX,XXX

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16.Length of film processed	XX
17.General comment of quality	GOOD

2.3 QUALITY CONTROL

Immediately after the development of negative films, test prints shall be prepared. The quality of photo image shall be inspected on the test prints.

The results shall be recorded in the Preliminary Quality Check sheets (see Appendix- 1).

Every flight record shall be reported in the Aerial Photography Log (see Appendix-2).

Finally accepted aerial photographs shall be reported in the Quality Check of Aerial Photography sheets (see Appendix- 3).

Overlap and sidelap of each photographs shall be reported in the Check List of Aerial Photograph sheets (see Appendix- 4).

2.4 FINAL PRODUCTS TO BE DELIVERED

The following final products shall be delivered to the JICA Study Team before the 28th of February 1999.

- | | |
|---|-----------|
| 1. 1:50,000scale negative film covering 10,600km ² | : 1 set |
| 2. 1:50,000 scale contact prints covering 10,600km ² | : 2 sets |
| 3. Photo index map (original and copy) | : 3 set |
| 4. Final report (report, log sheets, quality check sheets) | : 10 sets |

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PRELIMINARY QUALITY CHECK

Date Flown :			Photo Scale (Approx.):	
Camera :		Focal Length=		Film No. :
Run No.	Photo Number From - to	Number of Photographs	Result of Check	Remarks
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	
	-		OK	
	-		NG	

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QUALITY CHECK OF AERIAL PHOTOGRAPH

Project Name :				Area Name:			
Date of Photography				Film Number:			
Aerial Camera				Film			
Camera	Type:			Manufacturer:			
	Serial No.			Type:			
Lens	Type:			Emulsion Number:			
	Serial No.			Length: _____ m			
	Focal Length:			Processing			
Filter	Type:			Date:			
	Serial No.			Method of		Development	
Serial No. of Magazine							
Exposure							
Lens Aperture _____ f/							
Shutter speed: _____ 1/ _____ sec							
Run	Counter Number	Run	Counter Number	Run	Counter Number	Run	Counter Number
	~		~		~		~
	~		~		~		~
	~		~		~		~
	~		~		~		~
	~		~		~		~
Development		Under Normal Over					
Exposure		Under Normal Over					
Gradient		Low Normal High					
Fiducial Marks							
Counter Number							
Clock							
Altimeter							
Vibration							
Dust							
Scratches							
Haze							
Smoke							
Clouds							
Cloud Shadows							
Leader							

Handwritten mark

Handwritten mark

Aerial Film Report

MAPS geosystems

Film No.	MA9901	Country	MALI		Project No.	3290						
Project(s)	KITA area /NTMK project			Client(s)	JICA/DNCT							
Project remarks												
Camera type	TOP15	Camera serial no.	142827		Film magazine	T						
Lens type	A3	Lens serial no.	142823		Cal. focal length (mm)	153.401						
AV filter (%)	36	Auxiliary filter	B		FMC	ON						
Film type	2412	EAFS (ISO A)	50		Film batch no.	2402						
Navigation system	T.NAV	Pinpoint, V/H or mixed	P		GPS receiver type	GLOBOS						
DGPS (PP/RT/None)	PP	Aircraft type	PA-31T		Aircraft registration	N900TB						
Pilot	FLO	Navigator/Photographer	LCV		Observer	Modibo						
Aircraft remarks												
Date	Start	Scale	AMSL	Drift	Run	Dir.	From	To	Finish	Shut.	Aper.	Remarks
27.01.99												Camera test 12 blanks
	11:21	52000	28000	-1	13	278	1	6	11:25	200	4,8	
	11:31		28000	+1	11	98	7	14	11:36			
	11:42		27500	-2	12	278	15	24	11:48			
	11:56		27500	+2	10	98	25	44	12:08			
08.02.99												1 blank
	11:55	52000	27300	-2	15	98	46	59	12:03	250	4,5	
	12:06		27100	+2	16	278	60	73	12:18			
	12:24		27600	-2	17	98	74	87	12:31			
	12:36		27100	+2	18	278	88	101	12:47			
	13:00		27000	-2	20	98	102	107	13:05			
	13:10		27000	+2	19	278	108	113	13:14			1 blank
	13:21			+7	22	44	114	131	13:35	250	5,6	1 blank
	13:40			-7	21	224	132	150	13:53	250	5,6	
09.02.99												1 blank
	11:51		27000	+2	1	278	151	170	12:05	250	4,5	
	12:09		27200	-2	2	98	171	190	12:22			
	12:25			+2	3	278	191	210	12:41			
							211	225				8 blanks Tests
Processed by	LCV		Processor type	FE120		Dev. test time (min.)	5					
Developer type	DK-50		Dev. temperature (C)	24		Dev. time/speed (min.)	15					
Gamma	OK		Dev. replenishment rate			Dryer type, temp./None						
B+F density	OK		Density (L/OK/H)	OK		Contrast (L/OK/H)	OK					
Endlap range %	OK		Sidelap range(%/OK)	OK		Drift	OK					
FMC(L/OK/H/NR)	OK		Fiducial and titling	OK		QA check by	LCV					
Photo Lab remarks												

Aerial Film Report

MAPS geosystems

Film No.	MA9902	Country	MALI		Project No.	3290							
Project(s)	KITA area /NTMK project			Client(s)	JICA/DNCT								
Project remarks													
Camera type	TOP15	Camera serial no.	142827		Film magazine	H							
Lens type	A3	Lens serial no.	142823		Cal. focal length (mm)	153.401							
AV filter (%)	36	Auxiliary filter	B		FMC	ON							
Film type	2412	EAFS (ISO A)	50		Film batch no.	2402							
Navigation system	T-NAV	Pinpoint, V/H or mixed	P		GPS receiver type	GLOBOS							
DGPS (PP/RT/None)	PP	Aircraft type	PA 31T		Aircraft registration	N900TB							
Pilot	FLO	Navigator/Photographer	LCV		Observer	Modibo							
Aircrew remarks													
Date	Start	Scale	AMSL	Drift	Run	Dir.	From	To	Finish	Shut.	Aper.	Remarks	
09.02.99												15 blanks	
	12:51	52000	27000	-2	4	098	1	20	13:08	250	4.5		
	13:13		27200	+2	5	278	21	40	13:27				
	13:31		27000	-2	7	098	41	60	13:43				
	13:45		27100	-3	14	098	61	65	13:47				
10.02.99												2 blanks	
	12:35			-3	6	098	98	117	12:49	250	4.5		
	12:54			+3	8	278	118	137	13:07				
	13:14			-3	9	098	138	157	13:25			150= feu de brousse	
							158	172				5 blanks	
												13 tests	
Processed by								LCV	Processor type		FE120	Dev. test time (min.)	5
Developer type								DK-50	Dev. temperature (C)		24	Dev. time/speed (min.)	15
Gamma								OK	Dev. replenishment rate			Dryer type, temp./None	
B+F density								OK	Density (L/OK/H)		OK	Contrast (L/OK/H)	OK
Endlap range %								OK	Sidelap range(%/OK)		OK	Drift	OK
FMC(L/OK/H/NR)								OK	Fiducial and titling		OK	QA check by	LCV
Photo Lab remarks													

Result of Aerial Photography(Each course)

Run Number	Photo number	Quantity	Date	Map name in 1:200,000
1	0151-0170	20	9, Feb., 1999	Bafing Makana
2	0171-0190	20	9, Feb., 1999	Bafing Makana
3	0191-0120	20	9, Feb., 1999	Bafing Makana
4	0001-0020	20	9, Feb., 1999	Bafing Makana
5	0021-0040	20	9, Feb., 1999	Bafing Makana
6	0098-0117	20	10, Feb., 1999	Bafing Makana
7	0041-0060	20	9, Feb., 1999	Bafing Makana
8	0118-0137	20	10, Feb., 1999	Bafing Makana
9	0138-0157	20	10, Feb., 1999	Bafing Makana
10	0025-0045	20	27, Jan., 1999	Bafing Makana
11	0007-0014	8	27, Jan., 1999	Bafing Makana
12	0015-0024	10	27, Jan., 1999	Bafing Makana
13	0001-0006	6	27, Jan., 1999	Bafing Makana
14	0001-0006	5	9, Feb., 1999	Sirakoro, Bafing Makana
15	0046-0059	14	8, Feb., 1999	Kita, Sirakoro
16	0060-0073	14	8, Feb., 1999	Kita, Sirakoro
17	0074-0087	14	8, Feb., 1999	Kita, Sirakoro
18	0088-0101	14	8, Feb., 1999	Kita, Sirakoro
19	0108-0113	6	8, Feb., 1999	Kita
20	0102-0107	6	8, Feb., 1999	Kita
21	0132-0150	19	8, Feb., 1999	Diema
22	0114-0131	18	8, Feb., 1999	Diema
	Sum	334		