

TENDER NOTICE
June 2009

GOVERNMENT OF ANDHRA PRADESH



INVITATION
FOR BID FOR SUPPLYING
ON HIRE

UPTO THREE NUMBERS OF C-BAND
WEATHER RADARS (WITH OR WITHOUT
DOPPLER AND POLARIMETRIC FACILITY)
AND UP TO THREE NUMBERS OF
PRESSURISED AIRCRAFTS AND ONE
CLOUD PHYSICS AIRCRAFT

FOR
CLOUD SEEDING
OPERATIONS IN
ANDHRA PRADESH
DURING MONSOON 2009

**RAIN SHADOW AREAS DEVELOPMENT DEPARTMENT
Government of Andhra Pradesh, India**

TENDER NOTICE

Ref: Cloud Seeding/GOAP/RSAD/2009

Tenders are invited by Government of Andhra Pradesh, in RSAD Department for carrying out cloud seeding operations during the monsoon of 2009 in Andhra Pradesh. The eligible bidders are to quote their financial and technical bids in separate sealed cover for up to three Radars and three aircrafts and one cloud physics aircraft, so as to reach the undersigned on or before 03:00 pm on Monday 29th June, 2009.

The "Cloud Seeding Bid document 2009" containing the specifications along with details of the date and time of opening of technical and financial bids can be downloaded from the website www.aponline.gov.in (or) www.jntuh.ac.in

The bid security in the form of a Demand draft drawn in favor of **Principal Secretary to Government, RSAD Department, Government of Andhra Pradesh**, from any Nationalized Bank in India in Indian Rupees or in a freely convertible currency for an amount of Rs 30,00,000/- (Three million Indian rupees) should be enclosed to the technical bids.

The contact address for communication: The Principal Secretary to Government, RSAD Department, K-Block, 1st Floor, A.P. Secretariat, Hyderabad 500 022, India. Phone 040-23450355, Fax 040-23450315. E-mail secyrsad@yahoo.com

**Prl. Secretary to Government,
RSAD Department,**

For any clarifications contact:

1. Mr. R.S.Goel, Principal Secretary, Rain shadow area Development Department, Government of A.P, Phone:: 040-23450355.
2. Dr.B.Venkateshwara Rao, Coordinator, CASWMT, JNT.University, Hyderabad, A.P. Phone 040-32408785 and
E-mail: coordinatorcas@gmail.com

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**RAIN SHADOW AREAS DEVELOPMENT
DEPARTMENT
Government of Andhra Pradesh, India**

CLOUD SEEDING PROJECT

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**BID DOCUMENT
FOR SUPPLYING ON HIRE
UPTO THREE NUMBERS OF C-BAND
WEATHER RADARS (WITH OR WITHOUT
DOPPLER AND POLARIMETRIC FACILITY)
AND UP TO THREE NUMBERS OF
PRESSURISED AIRCRAFTS AND ONE
CLOUD PHYSICS AIRCRAFT**

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INTERNATIONAL COMPETITIVE BIDDING

**FOR
CLOUD SEEDING OPERATIONS IN
ANDHRA PRADESH
DURING MONSOON 2009**

PART A – TECHNICAL BID

SECTION – I

RAIN SHADOW AREAS DEVELOPMENT DEPARTMENT Government of Andhra Pradesh, India MONSOON 2009

BID SCHEDULE

BID REFERENCE CloudSeeding/GOAP/RSAD/2009/ 14th June 2009

**LAST DATE AND TIME FOR
SUBMISSION OF BIDS:** 3:00 pm on Monday 29th June 2009

**DATE, TIME AND PLACE OF
OPENING OF TECHNICAL BIDS:** 4:00 pm on Monday 29th June 2009
at Office of Principal Secretary, RSAD,
K Block (1st Floor), AP Secretariat,
Hyderabad, 500022

**DATE, TIME AND PLACE OF
OPENING OF FINANCIAL BIDS:** 3:00 pm on Wednesday 1st July 2009
at Office of Principal Secretary, RSAD,
Room No.223, K-Block, (1st Floor),
A.P Secretariat, Hyderabad, 500022

**PLACE OF SUBMISSION
OF BIDS** at Office of Principal Secretary, RSAD,
Room No.223, K-Block, (1st Floor),
A.P Secretariat,
Hyderabad, 500022
Phone :: 040-23450355
Fax 040-23450315.
E-mail secyrsad@yahoo.com

Section II

GENERAL INFORMATION

INVITATION FOR BID FOR CLOUD SEEDING MONSOON-2009

Reference: Cloud Seeding/GOAP/RSAD /2009

1. Global Tenders through International Competitive Bidding are invited by the Rain Shadow Areas Development Department, K Block, Secretariat on **behalf of Government of Andhra Pradesh** for carrying out cloud-seeding operations to enhance rainfall during monsoon 2009.
2. It is proposed to take up cloud seeding operations for approximately 120 days, and this duration can be either extended or cut short up-to three weeks based on weather conditions during Monsoon period 2009, starting from second fortnight of July 2009, with a maximum of three C-Band weather Radars (with or without Doppler and Polarimetric Facility), located at Jawaharlal Nehru Technological University Hyderabad (JNTUH) in Hyderabad and Anantapur or any other place as decided by the Government, along with pressurized aircrafts to be located at Hyderabad, Bangalore and Tirupati or as decided by the Government and one Cloud Physics Aircraft for 30days during the above period. The deployment of Radars, Aircrafts and other accessory equipment necessary for cloud seeding along with the personnel must be deployed within two weeks of signing the contract.
3. Bidding is open to all National and International Bidders preferably having experience in predominantly warm cloud seeding activities. The bid document can be downloaded from www.intuh.ac.in or www.aponline.gov.in
4. The bidders are required to submit their technical and financial bid in separate envelopes properly sealed, so as to reach the office of the Principal Secretary, Rain Shadow Areas Development Department, K Block, 1st floor, Room No.223, A.P. Secretariat, Hyderabad 500 022 on or before the stipulated date, time and place as given in **Section I**.
5. The bid shall be secured with an Earnest Money Deposit (EMD) in Indian Rupees of Rs 30,00,000/- (Three million Indian Rupees) or in any freely convertible currency. The EMD shall be in the form of a Demand Draft issued by any Nationalized/ Scheduled Bank in India and drawn in favour of The Principal Secretary, RSAD, Government of Andhra Pradesh payable at Hyderabad. The EMD is to be part of the technical bid.
6. The pre-qualification of the bidders shall be done on the basis of Technical Bid documents submitted by them. **The technical bid will be opened on 29th June 2009 at 4:00 pm**, in the presence of the bidders or their representatives (if they so desire to attend), in the office of

Principal Secretary RSAD, K Block, 1st Floor, AP Secretariat, Hyderabad 500022, Andhra Pradesh, India.

7. The financial bid of technically qualified bidders **will be opened on 1st July 2009 at 03.00 pm** in the presence of the technically qualified bidders / representatives (if they so desire to attend) in the office of Principal Secretary RSAD, K Block, 1st Floor, AP Secretariat, Hyderabad, 500022, Andhra Pradesh, India – 500 022.

8. The right to accept or reject the bid without assigning any reasons are reserved with the Tender committee constituted by the Government of AP.

9. It may be noted that, if any of the date mentioned happens to be a holiday, the next working day holds good in lieu of the date mentioned.

10. The contact Address for communication is as below:

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1. Principal Secretary, Rain shadow area Development Department,
Government of A.P, Phone :: +91-040-23450355.

Fax : +91-040-23450315

E-mail : secyrsad@yahoo.com

URL : www.aponline.gov.in

2. The Coordinator,
Centre for Atmospheric Sciences & Weather Modification
Technologies (CASWMT), JNTU,
III Floor, ECE Block, Kukatpally,
HYDERABAD – 500 085, ANDHRA PRADESH, INDIA,
Phone +91-40- 3240 8743, / 3250 5591

Fax + 91-40-2305 3105

E-mail: coordinatorcas@gmail.com

URL: www.jntuh.ac.in

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Section III

TECHNICAL BID-INSTRUCTIONS TO BIDDERS

Introduction

1. Eligible Bidders.

This invitation for bid is open to all Bidders both National & International. Bidders with an ISO certification in weather modification will be preferred.

2. Cost of Bidding.

The Bidder shall bear all costs associated with the preparation and submission of his/her bid, and the Prl. Secretary, RSAD Department, GOAP will in no case be responsible or liable for those costs.

3. Clarification of bidding documents.

The Bidder requiring further clarification of the bidding document may notify the Principal Secretary, RSAD, Secretariat in writing or by electronic mail (hereinafter the term electronic mail is deemed to include telex/facsimile/email) at the address indicated in Section II. Office of the Prl. Secretary, RSAD Department or Coordinator, Centre for Atmospheric Sciences & Weather Modification Technologies, Jawaharlal Nehru Technological University, Kukatpally, Hyderabad, Andhra Pradesh, INDIA, 500 085, will respond in writing to any request for clarification of the bidding documents, which it receives no later than four (4) days prior to the deadline for the submission of bids prescribed in this contract.

4. Amendment of Bidding Document.

(a) At any time prior to 4 days of the deadline for submission of bids, Principal Secretary, RSAD Department, for any reason, whether at his own initiative or in response to a clarification requested by a prospective Bidder, may modify the bidding documents by amendments.

(b) All prospective Bidders are advised to pursue Bid Document to know the amendment made if any.

Preparation of Bids

5. Language of Bid.

The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Principal

Secretary, RSAD, GOAP shall be written in English. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in English. In which case, for purposes of interpretation of the bid, the translation in English shall govern.

6. Documents Constituting the Bid.

The bid prepared by the Bidder shall comprise of two components viz. Technical Bid and Financial Bid:

Technical Bid

- (a) Technical proposal in the prescribed format as given in section V & VI.
- (b) EMD of Rs 30,00,000 (Three million rupees), through a Demand Draft, drawn on a Nationalized / Scheduled Bank in India, in favour of Principal Secretary, RSAD Department, GOAP, payable at Hyderabad, AP, INDIA.

Financial Bid

- (a) Price Schedule as prescribed in section VII & VIII.

7. Bid Prices.

The Bidder shall indicate on the appropriate price schedule the unit hire charges (wherever applicable) and total bid price on hire basis and the unit prices of the consumable goods it proposes to supply under the contract. The bid prices shall be inclusive of all taxes, duties etc levied outside India and the price for inland transportation, insurance and other local costs associated with delivery of the equipment, personnel & goods to their final destination. It shall exclude all taxes/duties/levies/charges levied in India

8. Taxes & Duties.

All taxes, duties and / or any other charges levied in India by either Central/ State Government, such as but not limited to, customs duties, entry tax, service tax, sales tax, VAT, airport parking and landing charges, navigation charges, octroi, etc., will be paid by the customer and it shall not be included in the unit price.

9. Prices.

Prices quoted by the Bidder shall remain fixed during the Bidder's performance of the contract and not subject to variation on any account, unless otherwise specified in this contract.

10. Bid Currencies.

Prices shall be quoted in Indian Rupees.

11. Earnest Money Deposit (EMD)

- (a) The Bidder shall furnish, as part of his/her Technical Bid, an EMD (as specified in Sec II Para 5) in the form a demand draft drawn in favor of Principal Secretary, RSAD Department, GOAP payable at Hyderabad.
- (b) Any Technical Bid not secured by EMD as specified above will be rejected as disqualified.
- (c) EMDs of un-successful bidders will be returned on selection of the successful bidder and the EMD of successful Bidder will be returned after completion of contract successfully.

12. Period of validity of Bids

- (a) Bids shall remain valid for the period of sixty days from the last date of submission of the bid. A bid valid for a shorter period shall be rejected, as non-responsive.
- (b) In exceptional circumstances, the Principal Secretary, RSAD Department, GOAP may solicit the Bidder's consent to an extension of the period of validity. The request and responses thereto shall be made in writing. A Bidder may refuse the request without forfeiting his/her EMD.

13. Format for Signing of Bid

- (a) The Technical & Financial bids shall be signed by the Bidder or a person duly authorized to bind the Bidder to the contract. All the pages of the bid except for un-amended printed literature portion, shall be initialed by the person signing the bid.
- (b) Any interlineations, erasures or overwriting shall be valid only if the person signing the bid sign them.

Submission of Bids

14. Deadline for Submission of Bids

- (a) Bids to be received by the Principal Secretary, RSAD Department, GOAP at the address specified no later than the time and date specified in Section I.
- (b) The Chairman Tender Committee, and the Principal Secretary, RSAD Department, GOAP may at his discretion, extend this deadline, for the

submission of bids by amending the bidding documents, without assigning reasons for the same.

15. Late Bids.

Any bid received by the Principal Secretary, RSAD Department, GOAP after deadline for submission of bids prescribed will be rejected and returned to the Bidder.

16. Modifications and Withdrawal of Bids

- (a) The Bidder may withdraw his/her bid after the submission of the bid, provided that written notice of the modification, including substitution or withdrawal of the bid is received by the Principal Secretary, RSAD Department, GOAP prior to the deadline prescribed for submission of bids.
- (b) A withdrawal notice may also be sent by electronic mail, but followed by a signed confirmation of notice to be received by Prl. Secretary prior to the dead line prescribed for submission of the bids.
- (c) No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity.

Opening and Evaluation of Bids

17. Opening of Technical Bids

- (a) The Tender Committee will open all the Technical Bids in the presence of Bidder's representative who choose to attend the bid opening, at the time, date and the place specified in Section I. The Bidder's representative who is present shall sign a register evidencing their attendance.
- (b) The Bidder's names, bid withdrawals and the presence or absence of requisite EMD, ISO certification copy if any, and other details as considered appropriate, will be announced at the opening. No bid shall be rejected at the time of opening of bids.
- (c) Bids that are not opened and read out at bid opening shall not be considered further for evaluation.

18. Clarification of Bids.

During evaluation of the bids the Tender Committee may, at its discretion, ask the Bidder for a clarification of his/her bid, if required. The request for clarification and the response shall be in writing.

19. Preliminary Examination.

- (a) The bids will be examined to scrutinize whether they are complete, whether any computational errors have been made, whether required

EMD have been furnished, whether the documents have been properly signed and whether the bids are generally in order.

- (b) Prior to the detailed evaluation of the technical bid, the substantial responsiveness of each technical bid to the bidding documents will be determined. For purposes of these Clauses, a substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without deviations. Deviations from, or objection or reservations to critical provisions, such as those concerning EMD, technical conformity, Applicable Law, Taxes and Duties & Force Majeure will make the Bid disqualified. The determination of a Technical Bid's qualification is to be based on the contents of the technical bid itself without recourse to extrinsic evidence.

20. Evaluation and Qualification of Technical and financial Bids.

In addition to technical specifications offered in Section V & VI of this document, following criteria may be considered for qualification of a technical bid by Tender Committee and some criterion may be exempted by Tender Committee depending on circumstances of any case.

- a. Contractor should have a minimum two years of experience using Radars & Aircrafts in Cloud Seeding operations.
- b. Contractor should have done at least one cloud seeding operation in the country (s) having similar Indian climatic conditions (Monsoon weather).
- c. Contractor should bring in, the latest model of Radars, Aircrafts and equipments required for cloud seeding.
- d. Contractor must produce a certificate issued by a competent authority (preferably national laboratories of India) on the make & type of flares used in cloud seeding and size of particles of **CaCl₂** and **AgI** after burning of flares.

21. Rejection of Technical Bids.

If a technical bid fails to qualify, it will be rejected and may not subsequently be made qualified by correction of the nonconformity by the Bidder. The financial bid of the Bidder, whose Technical bid fails to qualify, will not be opened and shall not be considered further for evaluation.

22. Opening of Financial Bids.

- (a) The Tender Committee or its representative will open the Financial Bids of only those Bidders whose Technical bid has been qualified, in the presence of Bidders representative who choose to attend the bid opening, at the time, date and the place specified. The Bidder's representative who is present shall sign a register evidencing their attendance.
- (b) The Bidder's names, bid form, price schedules, variable costs, discounts and such other details as considered appropriate, will be announced at the time of opening the Bid.

23. Clarification of Bids.

During evaluation of the bids the Principal Secretary, RSAD Department, GOAP may, at his discretion, ask the Bidder for a clarification of his/her bid. The request for clarification and the response shall be in writing.

24. Preliminary Examination

- (a) The Tender Committee will examine the bids to determine whether they are complete, free from computational errors, properly signed etc.
- (b) Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price, the unit price shall prevail and the total price shall be corrected accordingly,
- (c) The Tender Committee may waive any minor infirmity, nonconformity or irregularity in the financial bid, which does not constitute a material deviation, provided such waiver, does not prejudice or affect the relative ranking of any Bidder.
- (d) The Tender Committee may reject any Financial Bid which is conditional in nature and quotes different price for relaxation of some conditions in the Tender Document
- (e) The Tender Committee depending on price and other conditionalities quoted, has reserved the right to alter the number of Radar/ Aircrafts at their discretion.

25. Comparison of Financial Bids.

The Tender Committee will compare the Financial Bids, which have been determined to be qualified.

Award of Contract

26. Award Criteria.

The appropriate competitive authority will award the contract to the bidder whose bid has been evaluated to be suitable by Tender Committee.

27. Right to accept any Bid and to reject any or all bids.

The Tender Committee reserves the right to accept or reject all bids and to annul the bidding process at any time prior to contract award, without thereby incurring any liability to the affected Bidder or Bidders.

28. Notification of Award.

Prior to the expiration of the period of bid validity, the Principal Secretary, RSAD Department, GOAP will notify the successful Bidder in writing by registered letter or by electronic mail, about the acceptance of the bid.

29. Signing of Contract.

As soon as the Principal Secretary, RSAD Department, GOAP notifies the successful Bidder that his/her bid has been accepted, the bidder/bidder's authorized representative (with power of attorney to sign) shall attend the office of the Principal Secretary and sign the contract documents.

Corrupt or Fraudulent Practices

30. The Principal Secretary, RSAD Department, GOAP requires that all the Bidders and the successful Bidder under this contract observe the highest standard of ethics during this process. In pursuance of this policy, Principal Secretary, defines for the purposes of this provision, the terms set forth below:

(a) "Corrupt practice" means the offering, giving, or soliciting of any thing of value or bringing influence through political pressure to influence the action of a Member of Tender Committee / Coordinator / Office of the Prl. Secretary, RSAD, GOAP in the contract process.

(b) "Fraudulent practice" means

- Misrepresentation of facts to The Principal Secretary, GOAP, or to the Coordinator, CASWMT, JNTU or to any legal entity in India, in order to influence the award or execution of a contract.
- Collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels

and to deprive the Government of the benefits of free and open competition.

- 31.** Tender Committee will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.
- 32.** Tender Committee will declare a firm ineligible for award of the contract, either indefinitely or for a stated period of time, if it at any time determines that the firm had engaged in corrupt or fraudulent practices in competing for, or in executing, a contract in the State of Andhra Pradesh.

Section IV

ADDITIONAL CONDITIONS

1. Definitions.

In this document following terms shall be interpreted as indicated:

- (a) "The Contract" means the agreement that will be entered between the Coordinator, Centre for Atmospheric Sciences & Weather Modification Technologies, Jawaharlal Nehru Technological University, Kukatpally, Hyderabad, Andhra Pradesh, India, 500 072 and the Contractor as recorded in the Contract.
- (b) "The Contract Price" means the price payable in Indian currency to the Contractor under the Contract.
- (c) "The Goods" means all of the equipments, machinery and/or other materials either dismantled or mantled, which the Contractor is required to bring to the Coordinator for carrying out the cloud seeding operation in the state of Andhra Pradesh under the Contract.
- (d) "The Personnel" means all of the Radar and Aircraft staff mentioned in the technical requirement, which the Contractor is required for carrying out the cloud seeding operation in the state of Andhra Pradesh under the Contract.
- (e) "The Services" means those services required to be provided under the Contract.
- (f) "The Central Government" means the Govt. of India
- (g) "The Government" means the Govt. of Andhra Pradesh
- (h) "The Contractor" means the firm or individual entered into contract as named in special conditions of contract.
- (i) "The Coordinator" means The Coordinator, CAS & WMT of JNTUH or his authorized representative.

2. Services to be rendered.

The Contractor shall be required to provide any or all of the following services:

- (a) Furnish all necessary machinery, equipments and tools on hire basis and transportation necessary for cloud seeding activity as per contract with

the Principal Secretary, Rain Shadow Areas Development Department, Government of Andhra Pradesh in the monsoon season of the year 2009

- (b) Performance or supervision of on-site assembly of the supplied goods including calibration of radar etc for above said activity.
- (c) Furnishing of tools and spares required for assembling and/or maintenance of the Radar and Aircraft equipments for smooth and efficient working and maintenance of the each supplied equipment for above said activity.
- (d) To interact with precipitation enhancement activities through cloud seeding operations, with professional quality, technical accuracy, timely completion and the coordination of all services and other work covered under this Contract.
- (e) Contractor must produce documents every weekend about the parameters of Radars in use. I.e., Weekly calibration certificate and a log containing information on non-flying days of all available aircrafts with reasons.
- (f) Contractor must agree for the evaluation of cloud seeding data awarded by the RSAD, Government of Andhra Pradesh to any other agency for independent evaluation purpose.
- (g) The Contractor shall provide a Data link between the Weather Radar operation room and cloud seeding aircrafts in use and upload the Data for viewing.
- (h) The Contractor shall deploy the contracted Weather Radars, Aircrafts and other test equipments, goods, personnel and other assets within the time as stipulated in Section II in para 2. Govt. of Andhra Pradesh will obtain all the necessary clearances from all concerned departments/Ministries of Govt. of India such as Ministry of Civil Aviation, Ministry of Home Affairs, Ministry of Defense, Air Force HQ etc, required for the programme.
- (i) To conduct data gathering measurement activities through cloud physics (if any) with professional quality, technical accuracy, timely completion and the coordination of all services and other work covered under this Contract.
- (j) The contractor shall ensure that seedable clouds are treated with either Glaciogenic or Hygroscopic material (or both) in a timely and appropriate manner, to facilitate the enhancement of rainfall from those clouds. The entire cloud seeding operation shall be conducted using appropriate

scientific data generated and satellite data. Cloud seeding shall be conducted on the basis of mutually agreed protocols between the Coordinator and the contractor. The protocols will be part of the contract.

- (k) The contractor must produce a flare test certificate issued by a competent Government agency indicating the size of the particles released by the Glaciogenic and Hygroscopic flares after burning, produced before the commencement of Operations in 2009.
- (l) All flight safety considerations during seeding operations shall rest with the contractor.
- (m) Where the Aircraft will be stationed shall be decided by Govt. Aircraft Station may be changed without incurring additional expenditure by the Govt.
- (n) During normal cloud seeding days the radar is expected to operate from 06:00 am to 08:00 pm. However the radar operation shall be continued up to 24hrs in a day whenever monitoring agency desires so.
- (o) In all the operations of the cloud seeding programme, the contractor must cooperate and work with the monitoring agency (JNTUH).

3. Data and Record Keeping, Reporting Requirements:

- (a) The Contractor shall collect, archive, and make available all weather data including raw data of the RADAR, flight track records and other data that shall be useful in analysis and documenting the conduct of all cloud seeding operations. All the data shall be the property of Government of Andhra Pradesh.
- (b) Records of cloud seeding operations in the prescribed proforma denoting the precise time(s), place(s) and method(s) of all seeding operations shall be furnished to the Coordinator no later than 24 hours following the conclusion of cloud seeding activities for that day.
- (c) Within fifty days of completion of cloud seeding activities for the season, the Contractor shall submit five (05) copies of the final report on the cloud seeding programme to Coordinator. The final report shall summarize all elements of the programme and shall include project organization, list of Radar and aircraft equipment used, overall weather condition, storm events, preliminary evaluations and recommendation.
- (d) The Contractor shall provide a monthly report to the Coordinator about the previous month's operations covering the numbers and types of flares

utilized, the number of hours flown, a discussion of meteorological characteristics associated with each seeding event and a summary of incidents or situations affecting the operations of the programme.

4. **Aircraft.**

Fuel charges for the flight hours per aircraft shall be reimbursed to the Contractor as per actual, excluding free flying hours.

5. **Permissions.**

The Govt. of AP will obtain all the necessary permissions from the various Ministries / Departments / regulatory agencies of the Government of India and Government of Andhra Pradesh such as but not limited to Ministry of Home Affairs, Ministry of commerce, Customs Department, Director General of Foreign Trade (DGFT), Ministry of Telecommunications, Ministry of Civil Aviation, Ministry of Defense, Airport Authority of India, Ministry of Finance, DGCA, Indian Meteorological Department, Ministry of Water Resources Govt. of India, etc., required for carrying out the cloud seeding operations. However it shall be mandatory for the Contractor to inform the Government in writing regarding all required clearances from various Governmental-organizations failing which the Contractor shall be responsible for any consequential losses. Cloud seeding operations deemed to have commenced from the date of obtaining all clearances from the government if it delayed beyond 15days from the date of signing of the contract.

6. **Cloud Seeding Flares.**

The contractor shall exclusively use flares/ chemicals as cleared by the Government agency with a fitness certificate from, a Government approved competent agency mentioning size of particles (up to 10microns size) after burning and shall bring sufficient quantity of all types of flares before commencement of cloud seeding operations. It will be the contractor's responsibility to ensure that, the cloud seeding operations are not held up at any time during contract period for want of flares.

7. **Personnel.**

Contractor shall provide personnel for the operation of Radars and Aircrafts for conducting of cloud seeding operations. The Contractor shall be responsible for its employees in all respects, including, without limitation, their compliance with applicable laws and their safety.

8. **Radar Images.**

The Contractor shall maintain radar images on a web site, which shall be updated after every 30 minutes. The soft copy of images uploaded shall be submitted along with the final report.

9. **Safety.**

The Contractor shall be responsible for running the cloud seeding programme with due safety at his cost, in respect of equipment used. Responsibility to order suspension or continue the operations when flood conditions are expected/natural calamities and/ or for any other reason will lie with the Govt. of Andhra Pradesh / Coordinator, CASWMT, JNTU, Hyderabad.

10. **Payment.**

Payments shall be made in Indian currency only, either by opening L/C on nationalized bank or on submission of bills as per the terms of the contract.

- (a) **Mobilization Payment.** 15% of the fixed contract price shall be paid after deploying all the necessary equipment at the locations specified in the contract.

11. **Monthly Certificate of Acceptance:**

The contractor or his authorized representative shall furnish Radar/Aircraft details, every day, to the Coordinator or his authorized representative, the details of cloud seeding operations carried out in the past 24 hours. This information shall form the basis for Monthly Certificate of Acceptance. A certificate of Acceptance must be produced at every month end within the contract period shall be signed by both Contractor and Coordinator at the end of 30 days of work in the proforma prescribed in Section IX.

12. **Payment of Bills:**

- (a) The Contractor shall be entitled for the payments for supply & erection of Radars / supply of Aircrafts & Technical personnel, for the programme of cloud seeding operation as mentioned in Price Schedule.
- (b) The Contractor shall be entitled for payments of cloud seeding pyrotechnics, actual fuel charges for the flight hours for each aircraft and flying charges. The contractor shall bill them on running account basis every 10days of operations. The contractor may quote quantum of free hours he wishes to offer.

13. Prices.

Prices payable for those items, which belong to the contractor and supplied by the contractor as stated in the Contract (Radars/Aircraft/Personnel/Flares/Flying hours) shall be firm and not subject to adjustments during performance of the contract. This does not include any items, which are beyond the control of the contractor such as but not limited to, aviation fuel, airport charges, landing and parking charges or any other charges. The currency of the payment shall be in Indian Rupees.

14. Delay in Commencement of Operations

- (a) The Contractor shall provide the Equipments, Personnel and consumable goods for cloud seeding operations as per the contract at all radar stations and airstrips. The Contractor shall commence the cloud seeding operations within 2 weeks, after the contract is signed, subject to permissions being obtained by the Government of Andhra Pradesh.
- (b) Except as provided in this contract, a delay by the Contractor in commencement of cloud seeding operations due to reasons attributable to the contractor, shall render the Contractor liable to imposition of liquidated damages.

15. Liquidated Damages and non-performance.

- (a) It shall be binding on the Contractor to perform all work hereunder in a good and workman-like manner, strictly in accordance with the terms provided in this Contract. Failure to timely perform any of the work identified in this contract shall subject the Contractor to all applicable remedies of law and liable for paying compensation and penalties.
- (b) In case of non-performance of radar for cloud seeding work on days when the weather conditions are suitable for cloud seeding, on account of failure of systems and the failure is established objectively and as per mutually agreed protocols, the following provisions shall be applicable:
 - i. If cloud seeding is not conducted on a day when there are seedable clouds, due to failure of radar or aircraft or on account of any factor and consequent inability of the aircraft to take off, the contractor shall not be paid the hire charges of both the radar and aircraft and personnel for that day.
 - ii. In case cloud seeding was conducted even though the radar was non-functioning, only the radar hire charges will not be paid and the hire charges for aircraft that seeded the clouds shall be paid. In

these situations, the cloud seeding would have been conducted taking the help of data available from other sources.

- (c) If the failure to the conduct cloud seeding operations is due to the failure of aircraft, or the failure of radar or any other critical equipment on any day during the Contract period, which the contractor could have reasonably foreseen and avoided, then in addition to not paying the hire charges for those days, the Principal Secretary, RSAD, GOAP will penalize the Contractor an amount of Rs.50,000/- per day.
- (d) Alleged penalties will be addressed to Contractor in writing within seven (07) working days of the alleged occurrence. The Contractor will have seven (07) working days to provide a written response to the alleged penalty. Decision will be conveyed to the Contractor within 15 days of the reply.
- (e) The Contractor will make every effort to use all of its resources to maintain equipment in an operational state. It is understood by both parties that shipments are sometimes out of the control of the Contractor. The Contractor cannot be held responsible for delays of equipment in customs or shipping procedures.
- (f) In the event of a catastrophic failure where equipment will need to be replaced, the Contractor reserves a 10-day period where penalties would be waived to supply and replacement of radar.
- (g) Stoppage of operations due to Scheduled maintenance of radar/aircraft with the prior of approval of Coordinator will be permitted without attracting any penalty whatsoever. The schedule for stoppage of operations on account of planned maintenance will also be incorporated in the contract. Contractor will also be authorized to switch off the radar/aircrafts for maintenance on days, which are forecast to be clear, or seeding opportunities are unlikely. Coordinator's prior approval will be obtained for this.
- (h) The Radar personnel or pilots of the aircraft must work in coordination with each other along with the staff of the office of the Coordinator CASWMT.

16. Survival.

Termination of this Contract for breach shall not constitute a waiver of any rights or remedies available as per law or in equity to a party to redress such breach. All remedies either under this Contract or as per law or in equity or otherwise available to a party, are cumulative and not alternative

and may be exercised or pursued separately or collectively in any order, sequence or combination. In addition to these provisions, applicable provisions of this Contract shall survive any termination of this Contract.

17. Force Majeure.

- (a) Notwithstanding the provisions of this contract, the Contractor shall not be liable for forfeiture of its security deposit, liquidated damages, or termination for default if and to the extent, that its delay in performance or other failure to perform its obligations under the Contract if it is the result of and event of Force Majeure.
- (b) For purposes of this Clause, "Force Majeure" means an event beyond the control of the Contractor and not involving the Contractor's fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Secretary in its sovereign capacity, wars or revolutions, terrorism, fires, floods, epidemics, earthquakes, other natural calamities, quarantine restrictions and freight embargoes.
- (c) If a Force Majeure situation arises, the Contractor shall promptly notify the Principal Secretary, RSAD Department, Government of Andhra Pradesh in writing of such condition and the cause thereof. Unless otherwise directed by the Principal Secretary in writing the Contractor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

18. Termination for Convenience.

- (a) The Principal Secretary, RSAD Department, GOAP by written notice shall send notice of termination of the contract to the Contractor for the convenience of the Government. The notice of termination shall specify that termination is for the Government's convenience, and the date upon which such termination becomes effective.
- (b) The contract shall be terminated after 7 (seven) days of notice in advance. Contractor shall get 100 % compensation for the 7 days and Contractor shall continue to perform its operation during this period of Notice.

19. Insurance.

During the term of contract, the contractor must obtain and maintain in effect, at the contractor's expense, appropriate insurance policies to cover risks and liabilities related to the equipment and personnel of the contractor.

The contractor shall produce a copy of the insurance certificate to the Principal Secretary RSAD Department before commencement of cloud seeding operations.

20. Electric Power.

RSAD Department will provide electricity connection to the contractor, if available at places where Radar's were installed. The contractor shall make his own arrangements by installing generator where such electric supply is not available and also incase of power failure.

21. Applicable Law.

Interpretation of the entire tender and contract will be in accordance with the Indian laws and all legal actions shall be within the jurisdiction of High Court of Andhra Pradesh.

22. Notices.

Any notice given by one party to the other pursuant to this Contract shall be in writing and may be sent to the other party by personal service or by electronic mail or by speed post or by internationally recognized courier service and confirmed in writing to the other party's address. The address of The Principal secretary, RSAD Department, GOAP is same as in Section II, General Information. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

23. Assumption of Risk and Indemnification.

Each party should agree to indemnify and hold the other, including its officers, directors, agents and employees, harmless from and against all loss, cost, expense and liability (including legal expenses) arising out of any claim or cause of action for loss of damage to person or property, and injury or death of third parties, caused by, resulting from, growing out of or incidental to the services provided or to be provided by each party under the Contract and all weather modification operations contemplated by the Contract. Each party should acknowledge that the indemnity obligation to each other does not include damage to or loss of their respective property or injury or death to each party's respective employees, each party being solely responsible for their property and employees.

SECTION V

Technical Specifications & Responsiveness

The Bidder must describe in the format how his bid responds to the technical requirements of the goods, equipments and personnel. One or two word responses (e.g. “yes”, “No”, “will comply” etc.) are normally not sufficient to confirm the responsiveness with the technical requirements. The technical responsiveness depends on evaluation based on the given following formats. The Bidder must mention the values / figures for various specifications of equipments & goods he intends to use. Bidder must mention necessary values/ brands/ specs for * marked items in particular.

Sr. No	Item	Specification required	As offered by the bidder	Y/N
A	Radar – up to 3 numbers			
1	Operating Capability *	Should be C- band Polarimetric and Doppler weather radar (first preference) or C-band Doppler weather Radar (second preference) or C-band Weather Radar (third preference), supporting GPS & GIS software capable of operating continuously for 24 hours a day.		
2	Detection range *	Should be capable of detecting clouds up to about 250 km's radial range.		
3	Radio facilities	Radar to be fully equipped with two-way radio for communication with aircraft.		
4	Data Link	Must have data link equipment capable of receiving data from the aircraft & capable of storing this data.		
B	System Software			
5	Software	Such as TITAN or other equivalent latest software enabling the following: Screen image capture, calculation & display of Parameters etc. Real time control of radar parameters, ability to analyze the cloud by the ground experts in real-time and in archive mode. Capable of viewing the Radar Pictures on the Internet, at least once in 30 minutes		

C.	Cloud Seeding Aircraft (pressurized) – up to 3 numbers + one standby Aircraft			
1	Capability	(a) Should be capable to seed both warm and cold clouds. (b) Should be capable of both day and night operations or whenever required. (c) Should be capable to record Cloud Seeding events in the air and transmit the same to radar.		
2	Flight certification	Should be certified and cleared for Cloud seeding by a regulatory agency, such as FAA (Federal Aviation Authority, USA) or Aviation Authority of country of origin or the Director General of Civil Aviation, INDIA.		
3	Requirements	Must have on-board radar & GPS.		
4	Engine	Should be a twin-engine aircraft.		
5	Cruise speed *	Should have cruise Speed in excess of 200 miles per hour.		
6	Altitude ceiling *	The aircraft altitude ceiling should be above 25,000 feet		
7	Cabin	Should have pressurized cabin to enable Cloud Seeding operations above 25,000 feet.		
8	Flying Endurance *	Flying endurance should be ~ 4.5 hrs.		
9	Rate of climb *	Should have a good rate of Climb more than 1500 ft. per minute, enabling it to switch between base and top seeding quickly.		
10	Instrumentation	Should have full dual IFR instrumentation.		
11	Data Communication	Must have data link equipment capable of sending data from the aircraft to radar in real time.		
12	Transmission facility	Should have necessary arrangements to transmit GPS location of Cloud Seeding event to the ground radar in real-time.		
13	Icing Condition *	Should meet all requirements to fly and to conduct cloud seeding operations at an icing level of -10° C to -15° C		
D.	Flares			
14	Flares	The flares should have both certified Glycogenic and Hygroscopic Flares, burnt in place & ejectable Flares and should be capable of high yield and must be certified by a competent Government agency regarding size of particles after burning. A regulatory authority such as FAA / DGCA, India should approve equipment for fitment and release/burning of flares.		
E.	Cloud Physics Aircraft with equipments fitted for 30days during operation period.			
15	Cloud Physics.	a. Cloud Condensation Nuclei (CN or CCN) Counter - to measure concentrations of aerosols roughly 0.01 to 100microns. b. Passive Cavity Aerosol Spectrometer Probe (PCASP)- to measure concentrations and sizes of aerosol particles between 0.1 and 3.0mm diameter.		

		<p>c. 2D-P Optical Array Imaging Probe – detects cloud and Precipitation particles between 0.2 and 6.4mm diameter.</p> <p>d. Cloud Liquid Water content (LWC) measurement system.</p> <p>e. Total temperature Sensor.</p> <p>f. Dew point temperature sensor.</p> <p>g. Wind speed & direction sensor and recorder.</p>		
F.	Personnel			
16	Pilot	Commercial pilot having license from appropriate aviation authority of country of origin. Ability and certification to perform cloud seeding operations.		
17	Co-Pilot	Commercial pilot having license from appropriate aviation authority of country of origin.		
18	Meteorologist	Expert in weather forecasting & meteorology. Must have functioned as a forecast meteorologist earlier.		
19	Aircraft technician	Expert in maintaining, inspecting, troubleshooting of aircraft to be used in cloud seeding operation. He should have license as per regulations.		
20	Radar technician	Expert in maintaining, inspecting, troubleshooting of the radar & allied equipments to be used in cloud seeding operation.		

SECTION VI

TECHNICAL BID-FORMAT

All bidders shall submit the information in the following format along with bid document: as a separate enclosure

-
-
- a. **Name of the company.**
 - b. **Registered address of the company including e-mail address.**
 - c. **Technical staff working with details of experience**
 - d. **Past experience in cloud seeding, place and date with supported documents duly authenticated.**
 - e. **Performance certificate pertaining to cloud seeding work if any.**
 - f. **Annual-turnover, overall and turnover relating to cloud seeding with ISO certificate, if any.**
 - g. **Name of the Partners or representatives in India.**
 - h. **Audited annual statements for the last 3 years.**
 - i. **Details of the Radars used in warm and cold cloud seeding.**
 - j. **Technical Specifications & Responsiveness as detailed in Section-V**

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PART-B:: FINANCIAL BID

SECTION – VII

RAIN SHADOW AREAS DEVELOPMENT DEPARTMENT Government of Andhra Pradesh, India MONSOON 2009

PRICE SCHEDULE FOR FIXED COMPONENT

Sr. No.	Description of work	Qty	Unit	Unit price Amount in (INR)	Total Price Amount in (INR)
1	C-band Weather Radar or C-band Doppler weather Radar or C- band Polarimetric and Doppler weather radar as per specifications , equipped with radio etc., as per specifications for cloud seeding operations including personnel for radar station (Technical and radar Meteorologists) for a period of 120 days.	Up to 3	No's		
2.	Pressurized Aircraft on hire basis as per specifications, for cloud base and cloud top seeding equipped with all standard seeding equipments for cloud seeding operations including personnel for Aircraft Station, (Pilots and technical ground staff) for 120 days.	Up to 3	No's.		
3.	Cloud Physics Aircraft , equipped with airborne instruments as per specifications including personnel for Aircraft Station, (Pilots and technical ground staff) for 30days.	1	No's.		
Total Fixed Contract Price					

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Fixed Contract Price In Words:

Name:

Signature of Contractor:

Place:.....

Date:.....

Business Address:

SECTION – VIII

UNIT PRICE FOR VARIABLE COMPONENT

Sr. No.	Description of work	Quantity	Unit	Unit price in Indian Rs
1	Flying charges for the Aircraft per hour for each aircraft.	Actual	Hrs	
2	Supplying certified Hygroscopic Burn-in place flares each, including transportation and all allied charges excluding custom duties/levies and/or any other taxes and charges levied in India.	Actual	Nos.	
3	Supplying certified Ejectables flares each, of Silver Iodide including transportation and all allied charges excluding custom duties/levies and/or any other taxes and charges levied in India.	Actual	Nos.	
4	Providing Glaciogenic certified Burn-in place flares each, of Silver Iodide including transportation and all allied charges excluding custom duties/levies and/or any other taxes and charges levied in India.	Actual	Nos.	
5.	Free flying hours for all the aircrafts	Actual	Nos.	

Name:

Signature of Contractor:

Place:.....

Date:.....

Business Address:

SECTION – IX

Exhibit A

CERTIFICATE OF ACCEPTANCE

Name of Project:

**Name of Contractor/Company:
And Location:**

Customer's Name:

Address: _____

Contract No. & Date: _____

The undersigned certifies that:

1. All cloud seeding services have been performed in accordance with the contract for the period _____ and. (Contractor) is entitled to the scheduled payment for this period as stated in the contract.

2. The contractor/ Agency have not provided the service because of following. Hence he is to be penalized as per contract agreement.

SIGNED CUSTOMER NAME/TITLE DATE

SIGNED CONTRACTOR NAME/TITLE DATE