PROPOSAL

FOR THE SALE OF THE

TRANSPORTABLE TRANSPONDER LANDING SYSTEM (TTLS™)

To:

Thailand

BY:

Advanced Navigation & Positioning Corporation

Submitted ADVANCE AVIONICS & AVIATION CO.LTD. on October 5, 2014

TABLE OF CONTENTS

SCOPE OF THE PROPOSAL

This proposal is for the sale, installation and support of the mobile ANPC Transponder Landing Systems (TTLS®) to Thailand .

NATURE OF PROPOSAL

Expiry

The terms of this proposal will remain valid through March 31, 2015.

Non-binding

This proposal does not create or constitute any legally binding obligations between ANPC and THAILAND , and neither ANPC nor THAILAND shall have any liability to the other party with respect to this proposal until a definitive Purchase Agreement, if one is successfully negotiated, is executed and delivered by and between all parties.

If a definitive Purchase Agreement is not prepared, authorized, executed or delivered for any reason, no party to this proposal shall have any liability to any other party to this proposal based upon, arising from, or relating to this proposal.

Each party acknowledges that it will not take action or refrain from taking action in reliance on any of this proposal or the negotiation thereof, and that any such reliance would be at its own risk. No subsequent oral agreement or consent of the parties (including partial performance) shall be deemed to impose any such obligation or liability.

Pricing Structure

Price presented in this proposal is Firm Fixed Price except where additional work is required to define scope and price such as civil engineering, additional training, etc. For these items, we will complete the defining work and negotiate a Firm Fixed Price subsequent to contract award.

The prices presented on this proposal take into account the sale of 1 system.

Delivery Schedule

A generic schedule is shown at Attachment A. A detailed delivery schedule will be negotiated during contract award.

Proposal Presentation

The proposal is presented in five sections:

Section 1: ANPC Transponder Landing System

A description of TLS safety and economic benefits; system features and components; and system budgetary price.

Section 2: Support

An explanation of TLS siting flexibility, siting requirements, together with an explanation of pre-installation planning; on-site installation supervision; system calibration and initial Flight Inspection; technician training; assisted operations; and support budgetary price.

Section 3 Thailand Integration

In addition to ANPC, support will also be required from Thailand .

Section 4: TLS Support

A description of TLS reliability, maintainability and availability; system warranty; Field-level and Depot-level support; available Field-level spares stocking; and TLS support price.

Section 5: Payment

A description of payment terms, method and milestones.

ANPC TRANSPONDER LANDING SYSTEM

ANPC is the sole manufacturer of the TLS, and the unique precision approach and surveillance capabilities inherent in this multi-functional air traffic control system are not found in any other ATC system on the market today.

Each TLS provides three major components of an airfield area control and terminal approach capability:

- **Area Surveillance** - equivalent to a SSR
- **ILS** CAT I precision approach - equivalent to a conventional ILS
- **PAR** precision approach- equivalent to and emitting radar GCA

For clarity, the following paragraphs refer to a permanent-installation TLS. A description of the Transportable TLS (TTLS) follows highlighting transportable infrastructure. System characteristics and performance is the same for both permanent and transportable systems.

Transponder Multilateration

The ground-based TLS determines the location of an aircraft by transponder multilateration. The location of the aircraft is determined and presented in surveillance mode. If the aircraft is in the approach sector, then course correction is computed to the approach glide path and centerline in either a self-contained ILS approach or a ground-controlled PAR approach.

The TLS is compatible with Mode 3/A and Mode C transponder (Mode S transponders are Mode 3/A compatible).

Using multilateration of aircraft transponder signals for determining aircraft position enables creation of a virtual approach path and eliminates the need for precise siting of TLS antenna. Combined with a significantly smaller ground footprint, (a square of 100 meter sides) the siting criteria for TLS are very flexible.

Use of virtual flight paths mentioned above, enables curved, segmented and multiple approach options to avoid terrain, sensitive areas and provide widely varying approach paths for defense against hostile action.

Using a multilateration solution removes dependence on the ground plane and permits TLS to be installed in locations where the ground plain would prohibit use of a radio-beam in space ILS.

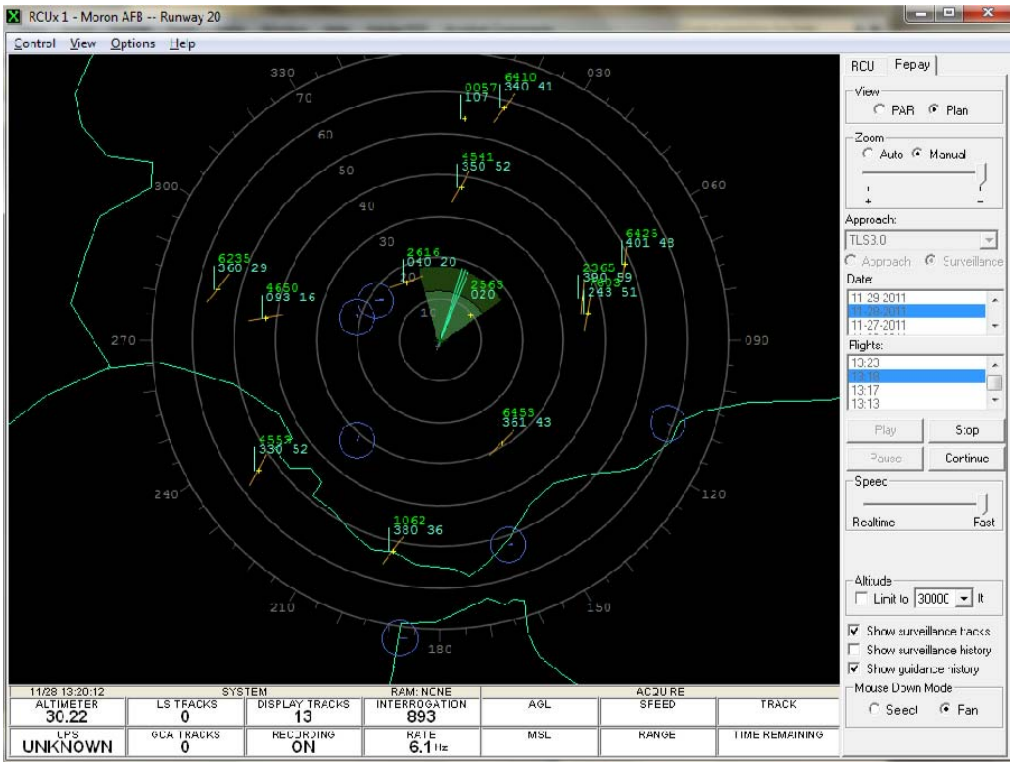
ATC Surveillance

TLS is a unique system in the market that provides instrument landing capabilities integrated with surveillance capabilities (secondary radar SSR and ATC display).

TLS provides area surveillance performance equivalent to a Secondary Surveillance Radar (SSR). The screen capture on the following page displays aircraft tracks around an airfield. The ‘tails’ shown can be selected On or Off.

Surveillance is provided from 0 nautical miles (nm) out to 60 nm to an altitude of 40,000 feet. Up to 100 aircraft can be identified and tracked by the surveillance system.

The update rate for surveillance is 2 Hertz.



SSR: TLS multilateration surveillance recording of aircraft in the south of Spain

ILS Approach

The system for Thailand will include quantity 4 of Guidance transmitters in order to support 4 aircraft on an ILS approach at one time. For an Instrument Landing System (ILS) approach, the course correction is transmitted to the aircraft where it is received by the localizer and glide slope receivers and indicated on HSI or CDI cockpit instruments allowing the pilot to follow ILS guidance to Category I minimums for a specified airport approach.

Aircraft making a TLS approach simply require traditional ILS instrumentation (no other equipment is required): An ILS localizer and glide slope receiver; a localizer and glide slope Horizontal Situation Indicator (HSI) or Course Deviation Indicator (CDI).

Just as with a conventional ILS where existing enroute Navaids are utilized to direct aircraft to initial approach fix (IAF), TLS area surveillance provides independent confirmation of initial and final approach fixes.

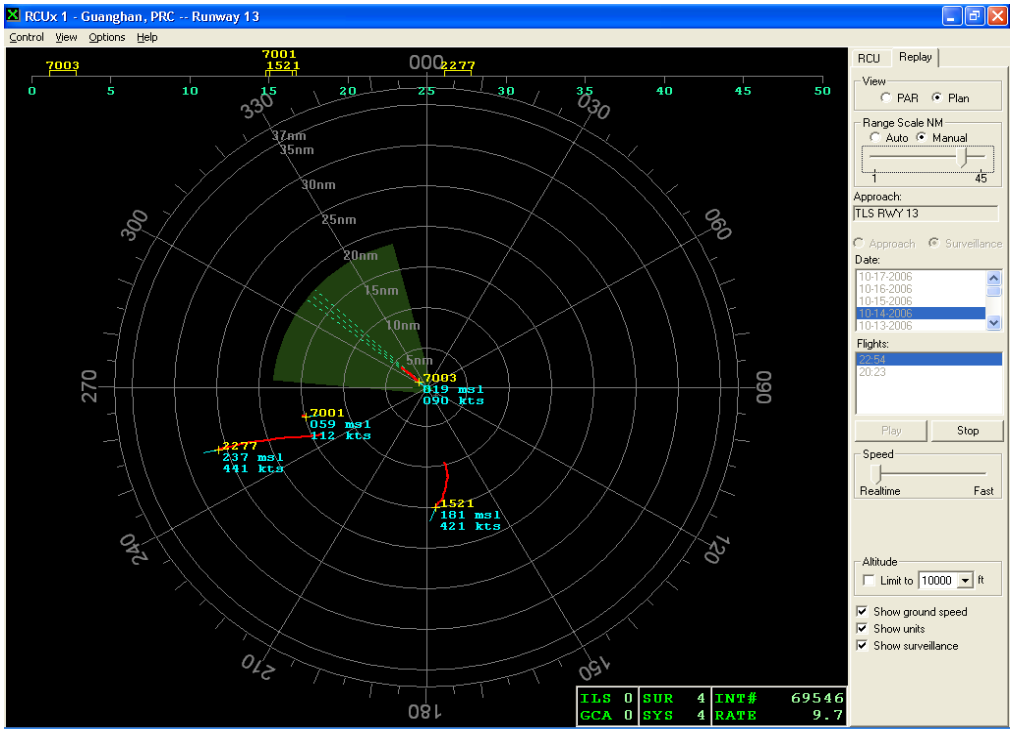
TLS approaches are designed for the lowest possible decision altitude supported by ICAO PANS-OPS and lead-in lighting. TLS outer, middle and inner markers are broadcast with the localizer signal, are self-contained within TLS and do not require any off-airport equipment.

All TLS glide slope and localizer signal parameters comply with ICAO Annex 10 Standards for a Category I ILS.

Precision Approach Radar

For a Precision Approach Radar (PAR) or Ground-controlled Approach (GCA), the controller presentation complies with military standards for PAR guidance by a ground controller. The controller is presented with glideslope, centerline and range information as shown in the lower screen capture on the following page.

As is the case with ILS approaches, a recording is made of each approach for use in training controllers and aircrew, and for incident investigation. The screen capture shows the recorded path of the aircraft in red. The TLS embedded software records each approach and allows replay for training or analysis.



SSR: Recording of surveillance of aircraft at Guanghan, China

PAR: Recording of an approach to Runway 34 flown by an aircraft squawking 5511 at Madras, OR

TLS BENEFITS

Terrain Multipath Compensation

A site-specific calibration procedure enables the TLS to compensate for terrain multipath that can prohibit the proper signal transmission of both conventional ILS and emitting PAR radar. TLS can improve the safety and accessibility of airports that cannot be served by other precision approach aids.

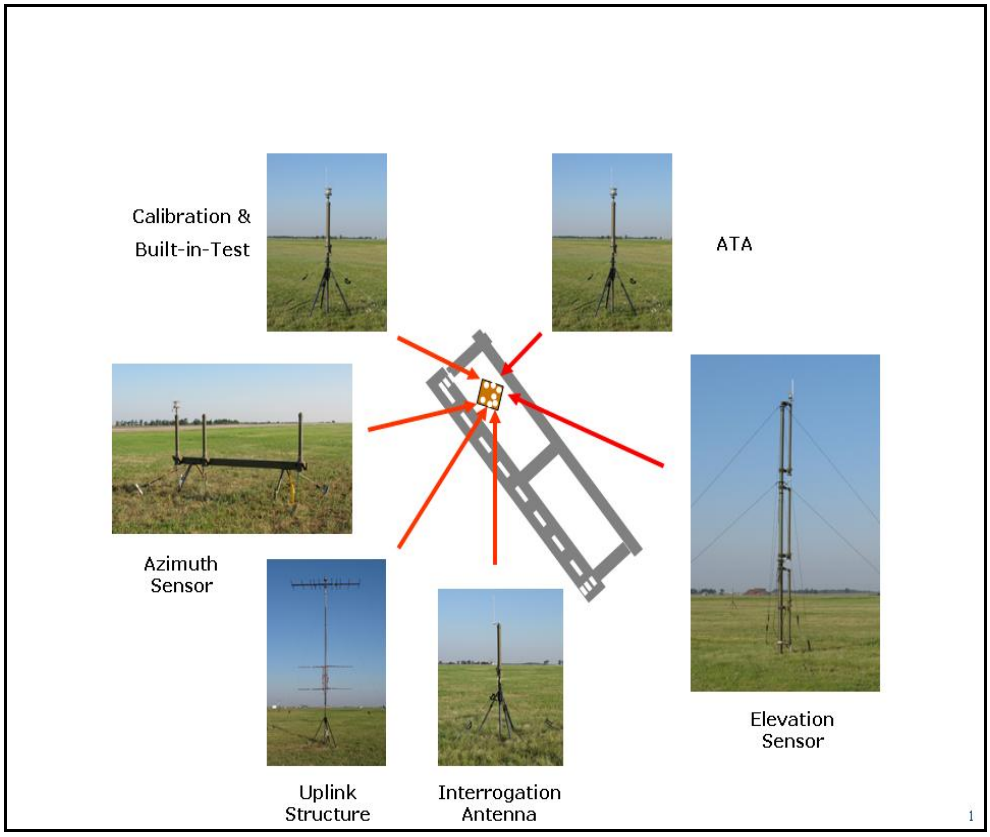
Small Footprint

All of the TLS components are located within a small "footprint" on the airport property. The TLS equipment's frangible design allows some components to be safely placed within airport obstacle areas, which further promotes ease of installation. The system's configuration is flexible and is easily customized to each site's requirements allowing components to be placed entirely on either side of a runway or straddling the runway.

The figures below show the individual system components and show graphically the small footprint on an airfield.

The upper figure shows the fixed-site components.

The lower figure shows the transportable components which are described in more detail in subsequent paragraphs.



Transportable TLS (TTLS)

Aircrew Training

Flying a TLS ILS or PAR approach requires the same skills as for a conventional ILS or PAR. For qualified aircrew, no additional training is required.

Reliability

Industry standard electronics ensure high reliability.

Mean time Between Failure (MTBF)

Unlike emitting radar systems, TLS has no moving parts and a very long time between failures. The calculated MTBF is 9000 hours.

Total Life Cycle Cost

The life cycle of a TLS is fifteen years. Each equipment set is delivered with a full one year warranty (details are listed in subsequent paragraphs) and spares. A second year warranty is provided as an option on this proposal.

The multiple functionality of a TLS comprising SSR, ILS and PAR capability makes TLS acquisition cost several times less than three independent systems.

Over the TLS lifetime, the maintenance following the initial warranty is estimated to be $20,000 per year at present year values. This is a fraction of the cost of maintaining emitting radars with mechanical antenna operation. In addition, the TLS power consumption in the range of 5KVA is less than the power consumption of three independent systems.

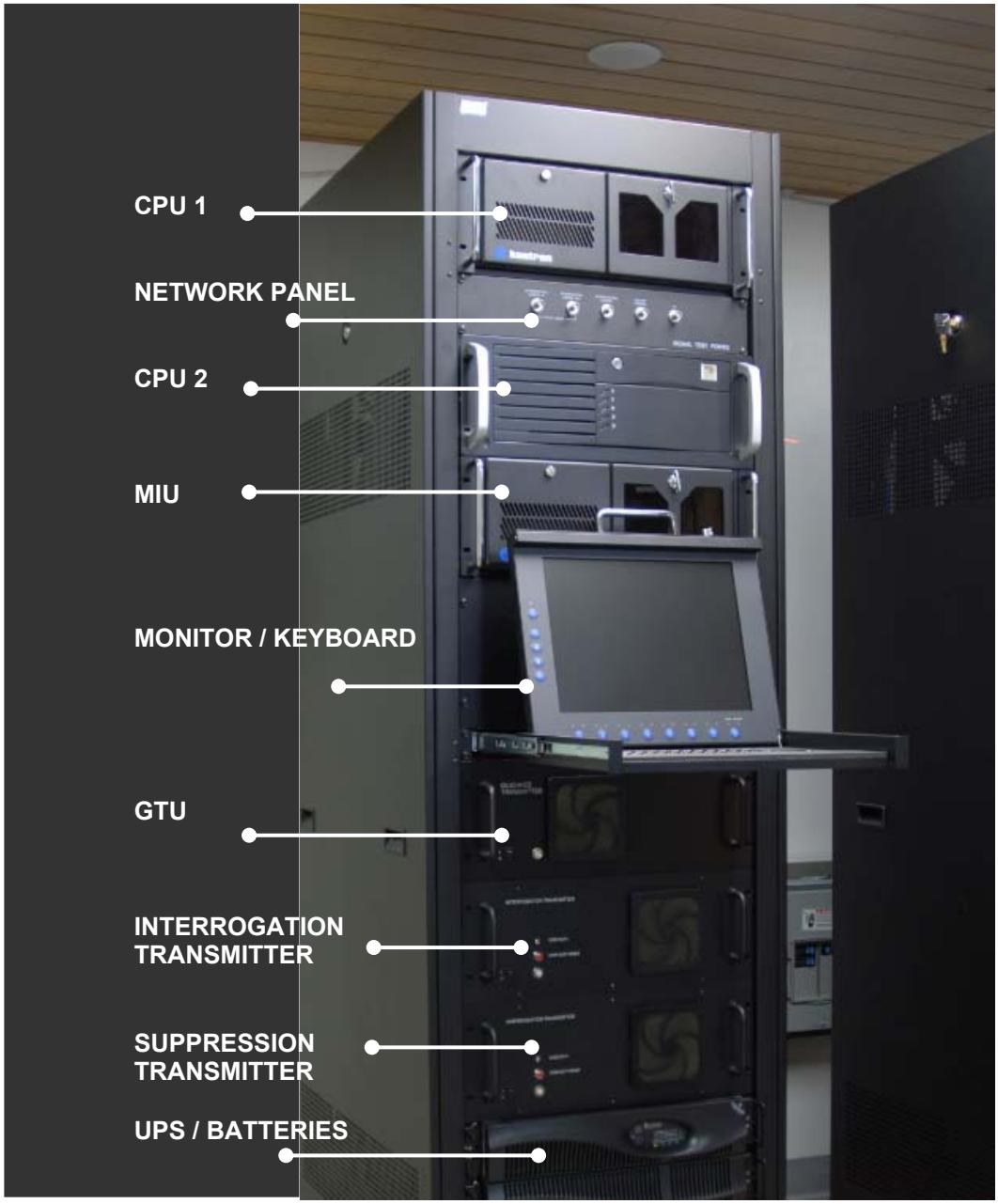
SYSTEM FEATURES

TLS System Components

All of the components that enable a Transponder Landing System to be assembled, integrated, tested and calibrated to full operational capability. The line items consist of: TLS Equipment shelter, TLS electronics, including power management, primary populated with LRUs; cables, sensors, antennas and structures; and the controller's Remote Control Unit.

Electronics Rack

The base station contains all the system processing and transmitting elements. These units are located in equipment racks within the station shelter/container.The figure below shows the electronics rack with components identified.



Uninterrupted Power Supply

One Uninterrupted Power Supply (UPS) set will provide power for sustained operations.

Environmental Control Units (ECU)

A primary ECU built into the TLS equipment shelter, together with a secondary ECU for back-up, maintains humidity and temperature control inside the TLS equipment shelter during TLS operations.

Tools and Test Equipment

All of the tools and test equipment to receive, install, operate and maintain a Transponder Landing System. Tools and test equipment are suitable for operation in Thailand conditions.

Documentation

The TLS Technical Instruction Manual includes TLS equipment site design, installation, flight inspection, diagnostics and maintenance, operations and training.

Internet Connection

The TLS system is fitted with an internet connection for remote monitoring of performance data. The connectivity to the internet is THAILAND responsibility.

Calibration

A theodolite, data link, portable ILS receiver with comprehensive procedures for ground-based technicians and flight crew will enable calibration of the TLS to eliminate multi-path for a particular site with any available aircraft when a designated Flight Check aircraft is not available.

TRANSPORTABLE TLS – TTLS

A high mobility configuration of the TLS ensures that area surveillance, CAT I ILS and PAR can be made available at tactical operating areas.

TTLS Components

The TTLS can be deployed via cargo aircraft or truck and installed by a three-man team. Combined with more flexible siting criteria than traditional ILS systems, the system supports precision approach procedures to tactical runways and landing zones.

In the following paragraphs, the TTLS infrastructure is described and illustrated.

Base Station

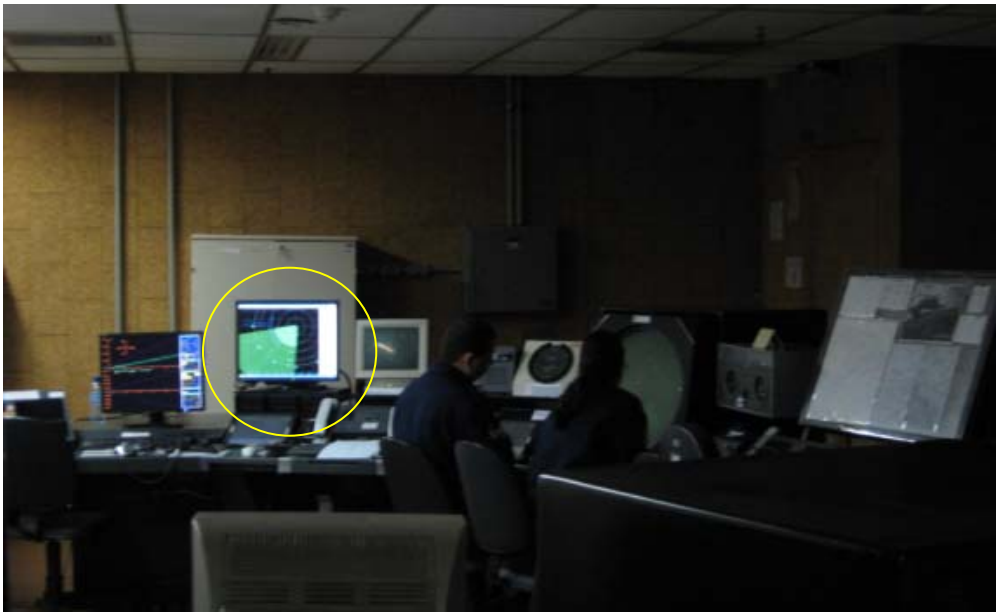
The base station contains all the system processing and transmitting elements. These units are located in equipment racks within the station shelter/container. A laptop serves as a maintenance interface Unit (MIU). Another laptop provides a user interface, the Remote Control Unit (RCU).

User Interface

The TTLS provides the controllers with two interfaces. The first is the base station MIU; it is used for system diagnostics, maintenance, and test control. The second is the RCU which provides the operator interface.

The MIU is a program which runs on a computer located in the base station shelter/container. It is used to start the system software, configure and calibrate the system, as well as to allow a technician to check the system's health and status and facilitate trouble shooting.

The RCU provides the user interface for the system. Like the MIU, it is a program which runs on a computer. The RCU communicates with the TTLS base station by means of an Ethernet connection or through an RF modem connection.



RCU Assembly installed in Brazilian Approach Control

Interrogator Assembly

The interrogator assembly is composed of a multi-faceted interrogation antenna and a separate P2 suppression antenna. The pulses are sent to the interrogator and suppression antennas via coaxial cable.

Sensor Arrays

There are two main measurement sensor assemblies that receive and measure aircraft transponder signals: the Elevation Sensor Array (ESA) and the Azimuth Sensor Array

ASA

A third single-antenna sensor array, Azimuth Time-of-Arrival Antenna (ATA) is used to calculate range and azimuth information while the system is in surveillance. Signals are carried from the antennas to the base station via flexible coaxial cables.

Mobile ASA Assembly

ESA

The ESA is comprised of four vertically polarized DME-type antennas. The antennas are mounted on a 30' / 9.1 m tower. Signals are carried from the antennas to the base station via flexible coaxial cables

Mobile ESA Assembly

Calibration and Built-in-Test Equipment Assembly

The BITE assembly consists of a vertically polarized DME-type antenna mounted on a guyed mast. The BITE generator is mounted in the base station rack.

Cal/BITE Assembly

Uplink Antenna Assembly

Uplink antenna assembly transmits ILS-like localizer and glide slope signals.

The localizer signal is transmitted by the VHF antenna. The antenna is a horizontally polarized Yagi antenna mounted 24 feet (7.3 m) above the ground and fed with flexible coaxial lines from the base station.

The glide slope signal is transmitted by the UHF antenna. The antenna is a horizontally polarized Yagi antenna mounted 12 feet (3.7 m) above the ground and fed with flexible coaxial lines from the base station. The antenna may be paired for greater signal strength.

TTLS Guidance Uplink Assembly

TRANSPORTABILITY

Thailand is requesting a container type shelter to meet its operational, storage and transportation needs.

TTLS Container

THAILAND 's selection of a mobility option for TTLS (container type shelter) will involve the construction of the container and electrical work. ANPC's quote takes into account the building of the container and shipping to Thailand .

Tier Two Field Level Support

It is recommended below that Tier Two Field Level Support be established in Thailand .

SUPPORT

ANPC will support the TTLS acquisition, site planning, installation, calibration and flight inspection.

TTLS Acquisition Process

The following activities are the process steps for TTLS acquisition:

Contract Award

Upon the award of contract, ANPC initiates production of THAILAND TTLS and establishes a schedule for all support activities and THAILAND interface.

Factory Acceptance Test (FAT)

Factory Acceptance Testing (FAT) is conducted by ANPC and THAILAND representatives at ANPC facilities in Hood River, Oregon, U.S.A., pursuant to the ANPC FAT Procedure. The TTLS electronics will be accepted by THAILAND at Hood River, Oregon, at the completion of the Factory Acceptance Test. This may also be done in the form of a Certificate of Conformance, if THAILAND decides not to be present during the acceptance tests at the Factory. In this case, ANPC will perform all the necessary tests, as per the TLS Test Procedures, and will send the Notebook of Results to THAILAND for verification and approval.

Shipping

ANPC will ship the TTLS according to IncoTerms 2010 DAP to an THAILAND named port of entry. ANPC will coordinate and manage all logistics activities, to get the TTLS from Hood River to the named port of entry. Shipments will be via ocean freight, unless an alternate means is requested by, and paid for by THAILAND . Any U.S. origin and/or Thailand destination fees, taxes, and duties are not included in the DAP shipping price quoted and are the responsibility of THAILAND .

TTLS Siting and Installation

Site Planning

ANPC will conduct a site survey at THAILAND locations and prepare an Installation Analysis.

Electronics and Infrastructure Installation

THAILAND will install the TTLS at THAILAND location with ANPC supervision, as per the training provided by ANPC.

Satisfactory completion of this task will be validated through the successful completion of the TTLS Site Acceptance Test Procedure as set forth in ANPC's TTLS Technical Instruction Manual.

Installation Acceptance Tests (IAT)

This step in the acquisition sequence is the acceptance of the installation using the ANPC IAT Procedure.

System calibration

System Calibration is an integral step in TTLS set-up. ANPC will provide the procedures and briefings to customer-designated air traffic control representatives and the calibration flight crew. THAILAND will provide the aircraft and flight crew necessary to perform the calibration flight at THAILAND expense.

Site Acceptance Test (SAT)

Site Acceptance Testing is conducted in accordance with the TTLS Technical Instruction Manual by ANPC engineers and THAILAND representatives at the TTLS location.

Approach Design

THAILAND is responsible for TTLS Approach Design. ANPC will be pleased to recommend a certified approach designer if that service is not available.

Flight Inspection

ANPC engineers and THAILAND -designated representatives will conduct a Flight Inspection to ILS Category I standard as identified in ICAO Document 8071, Chapter 4, and verify system performance after all necessary equipment is installed and calibrated to validate and certify that the system and its attendant procedures are safe for flight. To assist THAILAND , an ANPC TLS-specific flight inspection document is available for flight inspection crew orientation. THAILAND is responsible for fulfilling any Thailand requirements for TTLS commissioning. ANPC will assist as required.

THAILAND will provide the flight check equipment equipped aircraft and flight crew necessary to perform flight inspection at THAILAND expense.

TRAINING AND ASSISTED OPERATIONS

Technician Training

ANPC will provide classroom-based and hands-on training in the proper setup, operation, maintenance, and calibration of the TTLS in Thailand . The classroom education and field-training period will be ten (20) work days. Following this training, THAILAND technicians will have sufficient knowledge to operate and maintain the TTLS to the Line Replaceable Unit (LRU) level.

Number of trainees

ANPC will provide training for up to six (6) students. Additional students may be accommodated upon mutual agreement between the parties.

Training Materials

ANPC will provide all training materials and aids in the English language and training will be conducted in English. Translation may be provided by THAILAND if so required.

Training Location

Training will be provided by one ANPC engineer using facilities provided by THAILAND .

Training Syllabus

Examples of hour's allocation to the training syllabus are shown at Attachment D.

Air Traffic Controller Training

ANPC will provide Air Traffic Controller training in the operational procedures of the TTLS. Training will consist of two (2) hours of classroom followed by on-the-job training of Controllers at the TTLS location during flight operations. If aircraft targets of opportunity are not available, Customer will provide aircraft for training.

Number of Trainees

ANPC will provide training for all available Air Traffic Controllers, who will operate the TTLS over a three (3) work-day cycle.

Training Language

Air Traffic Controller training will be conducted in English using ICAO terminology.

Training Location

Training will be conducted in shifts as Air traffic Controllers become available for duty with classroom training using facilities provided by THAILAND .

TTLS SYSTEM BUDGETARY PRICE

(1) Transportable TLS with MOBILIZER (BASIC OFFER)

Electronics

SSR, ILS and PAR Electronics, infrastructure and test equipment, and 5KV generator installed in 20' CONEX container **1 (One) year warranty**	**$ 2,300,000 per system**

Services

Factory Acceptance Tests **Calibration and Flight Inspection** **Technician and Controller Training** **Logistic (*DAP* to Port in Thailand) including CONEX Shelter** **Site Acceptance Tests (SAT)**	**$200,000**

TOTAL TTLS Price

Total Price for (1) Transportable TLS	**$ 2,500,000.00**

TTLS SUPPORT

To realize the safety and economic benefits of TTLS, it is essential that TTLS Operational Availability remain as high as possible and that comprehensive support in Thailand is sustained after initial support has been completed.

For that purpose, ANPC is proposing a three-tiered support program: Tier One addresses Operational Availability; Tier Two addresses Field Level Support; and Tier Three addresses Depot Level Support.

Tier One: Operational Availability

TTLS is designed to achieve nine thousand (9,000) hours Mean Time Between Failures (MTBF) and one (1) hour Mean Time To Repair (MTTR). ANPC further recommends that THAILAND purchases a spares package which will compliment Operational Availability while replaced LRUs are cycled through Tiers Two and Three support levels.

Tier Two: Field Level Support

TTLS has a comprehensive Maintenance Interface Unit (MIU) built-in that can be accessed at the electronics racks or remotely through Ethernet and TCP/IP using a client on a standard laptop.

For multiple TTLS installations, ANPC recommends that THAILAND engages experienced technicians to conduct Tier Two support. Using MIU diagnostics, the Tier Two technicians will be able to advise on-site technicians on appropriate recovery actions to maintain Operational Availability of individual TTLS installations.

Tier Three: Depot Level Support

ANPC will provide Tier Three Support or Depot Level Support from its facility in Hood River, Oregon, USA.

THAILAND controllers and technicians will have access to Customer Support specialists at Hood River to help them resolve any issues during TTLS sustaining operations. The customer shall provide, via FTP, data files when requested, to obtain ANPC' assistance.

WARRANTY

ANPC warrants the TTLS will be free from defects in material and workmanship for 1 year from the date of delivery. The warranty will be limited to Tier Three repair and or replacement of parts and the necessary labor and services to bring the spares pool back to its full capability.

The warranty will not apply to the repair or replacement of the TTLS if the failure is due to normal wear and tear, improper handling, maintenance, or operation by the customer, excessive stress, and damage caused during relocation of the system, customer modification of software, or other causes not contemplated such as acts of nature or war.

Proper configuration management is essential to the continued operation of the TTLS and, as such, any use of any components, parts, assemblies, and the like from suppliers other than ANPC will void the warranty. The warranty is not transferable.

During Warranty period, shipping of defective parts to and from Hood River will be at THAILAND expense.

Post warranty period, ANPC will provide the same level of support as for the Warranty period based on a negotiated monthly recurring services contract.

ANPC will maintain a four (4) month turnaround time for defective parts, from receipt of returned materials at ANPC.

PAYMENT

Firm and Fixed Prices

ANPC firm and fixed prices are exclusive of sales tax, value-added tax (VAT), import tax, or any other applicable tax in Thailand . Payments shall be made free and clear of and without deduction or withholding for or on account of any present or future levies, imposts, duties, taxes, VAT, charges or other fees, if any (including but not limited to withholding or remittance taxes, remittance discounts, stamp taxes, exchange taxes, exchange discounts, income taxes, registration fees, contributions and other charges now or hereafter imposed by any applicable government entity or taxing authority).

If for any reason VAT or any other tax is withheld by Thailand Authorities or is charged or due by us, regarding activities to be performed in Thailand , THAILAND agrees to increase the gross amount to be paid to us by any such imposed tax, duty, et al, in order to maintain the same net amount for each financial milestone.

All fees, taxes, duties, and Performance Bond expenses are the responsibility of THAILAND .

Method of Payment

Payment of the total purchase price will be made in the milestone amounts and according to the schedule set forth below and as stipulated in a definitive purchase agreement agreed to and signed by the parties.

Payment will be made through an Irrevocable Letter of Credit by draws against milestones.

Payment Schedule

Payment schedules for each System shall be:

Milestone	Payment
Down Payment - Purchase Order signed	50%
FAT - Certificate of Conformance of System electronics at Hood River, OR	30%
Delivery of TTLS Electronics to Thailand	10%
SAT (Site Acceptance Test)	10%

Note: ANPC will only ship the equipment from the Factory after receipt of funds for the FAT milestone.

ATTACHMENT A: DELIVERY SCHEDULE

The Delivery Schedule outlined below takes into account the Payment schedule described above. Any changes to the Payment schedule will automatically affect the Delivery Schedule.

TTLS 1 DELIVERY SCHEDULE (Early delivery authorized)

EVENT	SCHEDULE
Receipt of Order	D = Start date
System build and test	D+1 to D+175 days
Tests in the factory in Hood River, OR, USA (COC)	D + 180 days
Technician training	D+180 to D+210
Supervisor training	D+210 to D+225
Transport of TTLS to Thailand	D + 200 days
Arrival of TTLS in Thailand	D + 230 days
Customs Clearance & Delivery to site	D + 250 days
System Acceptance Test (SAT)	D+250 to D+260
Assisted Operations	D + 260 to D + 275

ATTACHMENT C: TTLS SPECIFICATIONS

Item	Requirement
Interrogator Frequency	1030 ± 0,2 MHz
Receptor Frequency	1090 ± 3,0 MHz
Frequency Stability	± 10 khz
Timing of the Signals	P1 to P3 (mode 3/A), 8.0 µs ± 0.2 µs
	Pulse Width P1 and P3, 0.8 µs ± 0.1 µs
	Rise Time (all pulses) 50 ns to 100 ns
	Fall Time (all pulses) 50 ns to 200 ns
Operation Mode	Modes 3/A e C.
Interrogation Rate	10 to 25 interrogations per second
Receptor Sensibility	>-85 dBm
Number of Channels	3
Surveillance Requirements	The TLS must support the following surveillance requirements:
Monitoring Requirements	Up to 100 simultaneous aircraft on the surveillance mode
Surveillance Altitude	40,000 feet
Range of Surveillance	60 NM
Coverage in azimuth	Minimum of ±35º from the center of the runway (extended runway centerline)
Coverage in elevation	Between 1º to 75º of the horizon
Transponder response	Comply with Annex 10 Vol. 4 - section 3.1.1, of ICAO.
Azimuth error	Maximum of ± 2º of the real position
Distance error	Maximum 5% of the distance or 150m of the real position

Subsystem Localizer

Item	Requirement
Frequency	108,10 MHz to 111,95 MHz
Frequency stability	Greater than ± 0,002%
Separation between frequencies	50 kHz
Output Power	Comply with the coverage and electric field requirements established by ICAO's Annex 10, for ILS Category I.
Item	**Requirement**
Modulation Type	AM
Tone frequency tolerance 90/150 Hz	± 1.5%
Modulation Depth 90/150 Hz	Adjustable from 17% to 23%
Content of all 90 Hz harmonics	<10%
90/150 Hz – 90/90 – 150/150 "zero crossing phase lock"	$\leq 20^0$
Course alignment accuracy in relation to the runway centerline	± 7,5 m (± 4,5 m , at the "ILS Reference Datum"
Identification Tone	1020 Hz ± 50 Hz
Depth of Modulation Identification	Adjustable from 5 to15%
Code of the Identification signal	International Morse Code
Course width	Up to 6º above the horizontal, adjustable. Must meet the tolerances of the monitor width
Antenna polarization	Horizontal
Displacement sensitivity	0,00145 DDM/m on the "ILS Reference Datum"

Subsystem Glide Slope

Item	Requirement
Frequency	329,15 MHz to 335,00 MHz
Frequency stability	+/- 0,002%
Maximum output power	Enough to meet the coverage and electric field requirements established by ICAO Annex 10 for ILS category I.
Modulation Power	AM
Tone frequency tolerance 90/150 Hz	± 2,5%
Modulation Depth 90/150 hz	Adjustable from 36% to 44%

Angle	Adjustable from 2º to 7º

General and Environmental Specifications

Item	**Requirement**
Calibration/Build-In-Test Generator - Frequency - Maximum RF Power	1090 MHz 40 dBm
Voltage Supply:	240 VAC ± 10%, 50 to 60 Hz
Maximum consumption of the TLS System, considering the main electronics racks	3 KW
Item	**Requirement**
Wind speed	Up to 160 km/h for the exposed components
Temperature (external equipment):	-50º C to + 52º C (+18º C direct sun light)
Item	**Requirement**
Temperature (equipment in the shelter):	-10º C to + 50º C
Internal relative humidity	Up to 90%
External relative humidity	Up to 100%

ATTACHMENT D: TTLS TRAINING HOURS OVERVIEW

DAY OF TRAINING	Intro, Theory & Siting	Installation / Assembly	Line Replacement Units	Maintenance	System Configuration	Calibration and Flight Inspection	Maintenance / Return to Service	Swapping spares	Data Archiving	Total hours
1	4	2								6
2			1	3	2					6
3					2	2	2			6
4		4				2				6
5			2		2			2		6
6		4	2							6
7		4					1		1	6
8				2		2		2		6
9				2		2		2		6
10						2	2		2	6
11		6								6

12		6								6
13		6								6
14		6								6
15		6								6
16		6								6
17		6								6
18		6								6
19		6								6
20		6								6
									Total	120