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AIR TRAFFIC CONTROL & COMMUNICATIONS SERVICES

F A C T S H E E T

KAYA Associates, Inc. provides engineering, site preparation, construction, communications, installation, maintenance and fabrication services in support of Air Traffic Control (ATC) and Communication facilities. KAYA personnel have over 25 years' worldwide experience engineering, constructing, installing, repairing, and maintaining a myriad of ATC navigation, communications, and telecommunications equipment/facilities for our customers and have worked at virtually every US Army Airfield worldwide. Our installation teams provide turnkey "cradle to grave" services, from engineering, site preparation, construction/installation, heavy equipment operation, rigging and lifting, integration, tower erection, fabrication, repair, checkout and testing, modification, maintenance and site acceptance to de-installation/removal and site demolition for ATC, Air Traffic Services (ATS) and Communications facilities, as well as upgrade of electrical/electronic equipment and systems (hardware and software).

Representative Projects

Collectively, our highly skilled technical/installation staff has successfully completed all facets of installation, relocation integration and construction projects worldwide for our customers. The following pages depict a few or our completed project.

Capabilities

- Project management
- Site surveys
  - Site selection
  - FAA-1A
  - HERO analysis
  - HERF analysis
  - HERP analysis
  - RF authorization
  - EMI studies
- Engineering design
- Drafting
- Development of test, checkout, and certification procedures
- Integrated logistics support services
- Installation, site preparation, integration, modification, and upgrades of ATC/communications equipment, systems, and facilities
- Navigation and landing systems
- Site construction
- Design, development, and installation of state-of-the-art communications systems
- Software development
- Equipment analysis
- Installation and configuration of electrical systems
- Full Service Fabrication Facility

Project Location Displayed
Fort Huachuca, AZ

KAYA's Role

- Primary Contractor
- Project Management
- Engineering
- Construction
- Fabrication
- Site Preparation
- Installation/Erection
- Demolition
- Testing
- System Acceptance

End Customer
Libby Army Airfield (LAAF), Fort Huachuca, AZ.

Fort Huachuca, AZ ATC Transmitter/Receiver Relocation Projects

KAYA was awarded a Corp of Engineers (COE) POCA, IDIQ contract by the Los Angeles District, to include all of the South Pacific Division, to support the ATC Transmitter and Receiver Site Relocation Projects at Fort Huachuca, AZ, Libby Army Airfield (LAAF).

Before

After

KAYA was responsible for the engineering design, site/facility construction, tower renovation, 80' tower fabrication and erection, tower de-installation, transmitter/receiver relocation, microwave system design and installation.

KAYA built the new transmitter facility at Laundry Ridge, which included renovating the existing tower, excavation, ground-up construction of the 30'x30' Transmitter Facility, access road, perimeter fencing, lightning protection, secondary duct-bank system for electrical service, fire alarm system, UPS, and backup generator. KAYA designed and installed a JF-12 certified microwave system between the Laundry Ridge Transmitter Site and LAAF Communications Equipment Room, which saved the Government approximately $800K in communications infrastructure construction to tie the Transmitter Site in to the existing base infrastructure.

At our Full-Service Fabrication Facility in North Charleston, SC, we designed and fabricated an 80' self-supporting antenna tower with OSHA-compliant stairs. The tower was packaged and shipped to LAAF, where KAYA performed the site construction and erection of the tower.

After site construction was complete, KAYA personnel completed the transmitter, receiver and microwave system installations, including integration, cutover, testing, training, and acceptance.

Project Location Displayed
Fort Drum, NY
Fort Wainwright, AK

KAYA's Role
- Primary and Subcontractor
- Project Management
- Engineering
- Site Preparation
- Installation
- Testing
- System Acceptance

End Customer
Product Manager Air Traffic Control (PM ATC), Program Executive Office (PEO), Aviation; Redstone Arsenal, AL

Standard Terminal Automation Replacement System STARS G-4 / ELITE

KAYA provided engineering and technical resources, materials, management personnel and staff to support the Army's STARS G-4 Program as a part of the DoD/FAA National Airspace System (NAS) Air Traffic Control (ATC) Modernization effort. KAYA provided management, administration, engineering, technical support, storage of ATC equipment, accounting, safety, security, and quality assurance for the Engineering, Furnishing, Installation, and Testing (EFI&T) function of the Army's PM ATC Program Office. Additionally, KAYA supported the integration, installation, relocation, site preparation, construction, modification, or upgrade of ATC equipment and systems, and/or facilities as identified by the Army's PM ATC Program Office.

Raytheon was requested by the Army's ATC Program Manager to employ KAYA as the sole source subcontractor to perform both site preparation and post-installation cutover tasks. We performed these tasks at 22 locations, all with an excellent performance rating, ahead of schedule and under budget. KAYA was integral with the initial installation planning for STARS G-4 system (based on the knowledge, expertise, and technical abilities of KAYA's ATC staff). Personnel at KAYA were responsible for the development of the process by which the STARS G-4 would be fielded and installed, as adopted by the FAA STARS Program Office.

KAYA was also responsible for the STARS ELITE system concept (based on development of STARS LITE platform). The STARS G-4 and STARS ELITE replaces current automation and displays used by FAA and DoD air traffic controllers. With the processing capability to integrate next- generation sensors (such as ADS-B), the STARS G-4/ELITE provides a fully sustainable platform for air traffic controllers for the foreseeable future.

Transportable Air Traffic Control (ATC) Communications and Radar Operations Facility (TACROF)

KAYA's Role

- Design
- Fabrication
- Site preparation
- Set-up

End Customer

Product Manager Air Traffic Control (PM ATC), Program Executive Office (PEO)

The TACROF is a fully-transportable, containerized, contingent airfield operations system. It has the necessary capabilities to replace an Army Radar Approach Control (ARAC) facility during renovation, equipment and facility upgrade periods, facility relocations, or in the event of a local natural disaster. This system is comprised of two separate sea-containers that are fabricated into separate equipment and operations shelters. These shelters contain all the necessary systems to adequately manage the airspace traffic of a fully-functional approach control facility while maintaining connectivity to the National Airspace System (NAS) (if applicable). They are fully climate-controlled and capable of running on critical (UPS/Generator) and non-critical (commercial) power.

The TACROF can be easily packed and readied for transport in a short period of time. The shelters are fabricated from sea-containers which can easily be shipped via road, air or rail to basically any location world-wide. The shelters have been specifically designed to fit into a C-5 or C-17, which gives the capability of being airlifted into any contingent location with emerging and ongoing ATC needs. The TACROF is designed to integrate existing radio frequency communications or use self-contained tunable UHF/VHF radios. Once delivered, all that is needed is a 50' x 60' plot, power source and radar/communications inputs to achieve full operational capability.

Project Location Displayed
Fort Hood, TX; Fort Stewart, GA; Fort Bragg, NC

KAYA's Role
- Project Management
- Engineering
- Site Preparation
- Installation
- Testing
- System Acceptance

End Customer
Project Manager Unmanned Aircraft Systems (PM UAS
Redstone Arsenal, AL

Ground-Based Sense and Avoid (GBSAA) Lightweight Surveillance and Target Acquisition Radar (LSTAR) Program for Program Manager – Unmanned Aircraft Systems (PM-UAS)

KAYA initially provided a ground-up, all-encompassing infrastructure baseline design supporting the PM-UAS GBSAA LSTAR project. Following the approved baseline design, KAYA provided project management, equipment, materials, engineering, drafting, fabrication, installation, integration and testing supporting the installation of the LSTAR and GBSAA systems. Radar tower build tasks range from initial site survey/soil analysis for each tower location, tower design, fabrication, site excavations, foundation design and build, tower assembly, tower erection, grounding, lightning protection, site electrical power system including Uninterruptable Power Supply (UPS), security fencing, interfacility communication between radar sites and Grey Eagle Hangar, Outside Plant (OSP) Fiber Optic Cabling (FOC) installation, and testing of installed systems.

The Grey Eagle Hangar tasks included design and build of a two-way communication systems allowing Ground Base Operations (GBO) to communicate with the Unmanned Aircraft Vehicle (UAV) Ground Control Stations (GCS), establishment of an operations and equipment room, air conditioning and power upgrades as required, interfacility OSP FOC to the GCS site and radio communications infrastructure.

After successful first fielding at Fort Hood, TX, KAYA continued to the fielding schedule for Fort Riley, KS; Fort Stewart, GA; Fort Campbell, KY; Fort Bragg, NC; and Edwards AFB, CA.

Project Location Displayed
HQ Range Control
Camp Blanding, FL

KAYA's Role

- Primary Contractor
- Project Management
- Engineering
- Site Preparation
- Installation
- Testing
- System Acceptance

End Customer
Current G-2 STARS LITE replacement sites; small autonomous Air Traffic Control Tower/facilities requiring surveillance capability

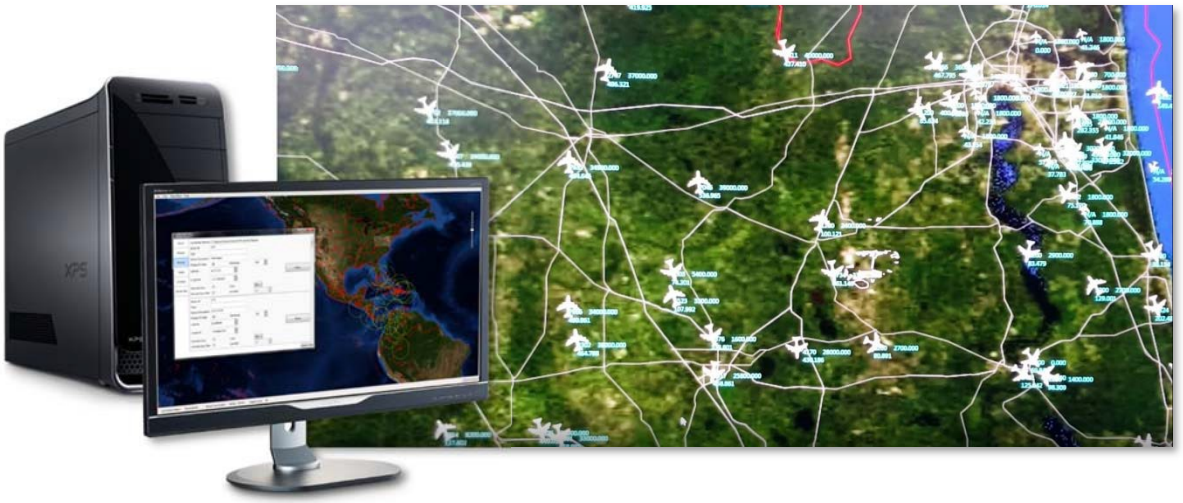
Camp Blanding Range Control, FL – Sunhillo Surveillance Monitoring System (SMS)

KAYA was responsible for providing the engineering, design, site preparation, installation, testing and training of a range monitoring display system at Camp Blanding Range Control, FL.

The original requirement was to provide a STARS LITE system, which KAYA has fielded at multiple Range and Air Traffic Control (ATC) facilities; however, the life cycle of the STARS LITE had ended with no future production, modernization, or support planned. KAYA reached out to Sunhillo Corporation and together facilitated the requirement with Sunhillo's SMS.

The result was a street-level, maps-based, multiple sensory input system that is easy to operate at any user skill level (Air Traffic Control Towers, Range Controls, Secure Communications facilities, etc.). The SMS, while having very minimal hardware, is capable of processing multiple sensor inputs (radars, ADSB, etc.) in both tracking and fusion modes. This makes the SMS an extremely powerful automation system comparable to those currently supporting the National Airspace System (NAS).

As a result of this success, KAYA and Sunhillo have entered into a Teaming Arrangement where we will continue to pursue legacy system replacement and new fieldings of the SMS as the next-generation small facility choice for automation systems. Future improvements will include scalability, enhanced mapping (terrain, streets, buildings), real-time weather updates, target recognition features (fixed-wing, rotary-wing, unmanned, large, small, aircraft), and flight data/plans inclusion.



Fort Greely, Alaska Instrument Landing System (ILS)

Project Location
Allen Army Airfield, Fort Greely, Alaska

KAYA's Role
- Project Management
- Engineering
- Site Preparation
- Installation
- Testing
- System Acceptance

End Customer
U.S. Army Space and Missile Defense Command (USASMDC)

KAYA served as the Project Manager for the installation of a capture effect glide slope, a 14-element array localizer, and distance measuring equipment (DME), collectively known as Mark 20A ILS. An Instrument Landing System (ILS) is used to provide an approach path for the exact alignment and descent of an aircraft on final approach to a runway. KAYA personnel were responsible for the engineering, site preparation, installation, optimization, and flight check for the new Mark 20A ILS at Fort Greely, Alaska.

KAYA provided a turn-key "cradle to grave" construction and installation project. KAYA personnel's specific responsibilities included:

- Perform the ILS site survey to determine that the system could be installed in accordance with the Federal Aviation Administration (FAA) siting criteria
- Prepare an engineering installation package (EIP)
- Develop the Lightning Protection System (LPS)/Earth Electrode System (EES) to ensure the ILS site is grounded, bonded and shielded in accordance with FAA guidelines and regulations
- Perform site construction and equipment installation
- Perform system optimization and flight check support

KAYA personnel also provided an engineering design for system remote monitoring that eliminated the cost of installing a complete communications manhole and duct system.

Project Location
Schofield Barracks, Hawaii

KAYA's Role
- Project Management
- Engineering
- Procurement
- Monopole Tower erection
- Installation
- Testing
- Acceptance

End Customer
Wheeler Army Airfield,
Schofield Barracks, Hawaii

Wheeler Army Airfield (WAAF) ATC Receiver Site Relocation

KAYA was subcontracted by International Construction, Inc. (ICI) to provide engineering, design, procurement, installation, testing, and acceptance services in support of the WAAF ATC Receiver Site Relocation effort. The project design consisted of a new equipment room layout, signal and Radio Frequency (RF) infrastructure, new power infrastructure to include tieback to the existing backup power generator, trenching and underground installation to support the new and backup power, a 60' monopole tower site preparation and installation to support the RF and microwave antennas, cable bridge and building entrance panel for routing RF and microwave cable installation, and grounding and lightning protection system.

The existing ATC Receiver Site supported critical safety of flight communications for WAAF flights, so the relocation had to occur with minimal downtown. The design and transition work plan enabled us to perform the installation with 100% success and no downtime during operational hours.

During the course of the installation, KAYA worked closely with the ICI Quality Control representative and adhered to all State, Federal and Local requirements, including Occupational Safety and Health Administration (OSHA) and Federal Aviation Administration (FAA) guidelines, which concluded with 100% compliance and customer satisfaction.