

For Government and Industry...

Unmanned and Manned



RAPID
INTEGRATION
AND
ACCEPTANCE
CENTER
(RIAC)

Capabilities Document
for Testing and
Demonstrations
including...

- Air to Ground
Weaponization
- Electronic Attack /
Electronic Warfare
(EA/EW) Signal
Intelligence (SIGINT)
- Air to Air, Air to Ground
Communications
- Engineering/Special
Research and
Development Trials
- ISR Payload Trials

A tenant organization of Dugway Proving Ground

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I. Introduction

RIAC Mission Statement

To enhance the Warfighter capabilities through the use of excellent Program and Test Management processes, System-of-Systems innovations, and a custom-tailored support network which allows for rapid support for testing, training, development, integration, interoperability validation, and new technology development of UAS systems.

II. RIAC: Rapid Support for Testing and Training

The Project Manager Unmanned Aircraft Systems (PM UAS) established the Rapid Integration Acceptance Center (RIAC) to create a single location where unmanned and manned aircraft could complete end-to-end testing and integration. Dugway Proving Ground's (DPG) Major Range and Test Facility Base (MRTFB) status, restricted airspace, acoustically quiet, minimal encroachment and low precipitation make DPG a textbook setting for integration activities which include non-program of record developmental tests, quick reaction fielding, cross platform interoperability demonstrations, acceptance testing for Army UAS, Ground Based Sense and Avoid (GBSAA) test bed development, and training Government Owned Contractor Operated (GOCO) units. RIAC, as a tenant of DPG, is fully capable of meeting test requirements for current and future diverse test, training and demonstration events.

A. Working with Users

RIAC strives to be a “One Stop Shop” by facilitating, advising, and guiding test planning and execution. Every member of the team is a user advocate and ambassador in dealings with our test partners. RIAC’s streamlined processes were created to insure safe and flexible operations while expediting program schedules. The operational infrastructure and associated equipment are designed for a variety of testing options with minimized cost to the user. We review requirements with users and assist with workability and backward planning timelines. As a result of pre-established agreements and risk assessments, timeline from first call to start of user testing can be as quick as six to eight weeks.

B. Our Test Partners

RIAC is committed to providing timely and exceptional support aided and streamlined by long term relationships with our test partner organizations, ranges, and Program Integration Facilities. This team-of-teams provide our users with the latest, state of the art expertise, services, and facilities whether or not organic to the RIAC. A full description of Partners and how we work with them can be found in Annex B. They include:

- West Desert Test Center (WDTC)
- Network Enterprise Center (NEC)
- Dugway Garrison
- Mission and Installation Contracting Command (MICC)
- Logistics Readiness Center (LRC)
- 88th Regional Support Command (RSC)
- Utah Test and Training Range (UTTR)
- Redstone Test Center (RTC)
- Joint Systems Integration Lab (JSIL)
- U.S. Army Aviation and Missile Research Development and Engineering Center (AMRDEC)
- Target Management Office (TMO)
- Current Equipment Manufacturers
- Wendover Airfield



III. RIAC Capability Category Descriptions

A. For all Test Categories

RIAC provides an ideal setting for conducting unclassified, classified and proprietary testing. In conjunction with its test partners, RIAC either provides or coordinates airspace, frequency use, test equipment, office trailers, command posts, towers, optics and cameras, hangar space, generators, range support vehicles, and base infrastructure such as WIFI, etc. The following are examples of tests executed at RIAC.

B. Airborne Weaponization Tests

RIAC provides both static and autonomous vehicle targets, telemetry, support personnel, weapon storage and handling (for most weapons). Previous weapons tests have included HELLFIRE, Joint Air to Ground Missile (JAGM), and Aviation Multi-Platform Munition (AMPM) on the Gray Eagle, Shadow, and Warrior Alpha systems.

C. Electronic Attack / Electronic Warfare (EA/EW) Signal Intelligence (SIGINT) Tests

RIAC's remote and isolated range make it ideal for EA/EW testing. RIAC coordinates with local Army and Air Force Spectrum Managers for support to assist users in gaining approval for special frequency requirements. Programs using RIAC for testing have included Network Electronic Warfare Remotely Operated (NERO), Tactical Sensor Payload (TSP), and Navigation Evaluation and Anti-Jam Technology (NEAT).

D. Air to Air, Air to Ground Communication Tests

The vast amount of restricted airspace creates the ideal setting for long distance, line of sight, communication relay, over the horizon, and encryption tests. RIAC Test Leads coordinate with local Army and Air Force Spectrum Managers for support and assist users in gaining approval for any special frequency requirements. Extensive tests have been conducted in programs related to communications relay payloads, Tactical Interim Encryption System (TIES), and Tactical Common Data Link (TCDL).

E. Engineering or Special Research and Development Trials

RIAC facilities, test planning flexibility, available equipment and aircraft make it highly conducive for rapid integration of technologies, and for new science and technology programs. Offices supported have included PM UAS engineering, DARPA, and JIEDDO supporting Urgent Operational Needs (UONS) and Joint UONS (JUONS).

F. Intelligence, Surveillance, Reconnaissance (ISR) Payload Trials

Range areas, static and autonomous multispectral targets, and Systems Integration Lab (SIL)-like ground testing capabilities make ISR payload testing a core capability of RIAC. Extensive payload comparative tests and developmental tests have been conducted for Electro-Optical (EO)/ Infrared (IR) and Synthetic Aperture Radar (SAR) payloads supporting Night Vision Lab, PEO IEW&S and PM UAS.

IV. Quick Reference RIAC Overview



FIGURE 1: DITTO AREA, MICHAEL ARMY AIRFIELD & AVERY COMPLEX

MAJOR INFRASTRUCTURE:

- Facilities to support manned and unmanned testing
- Expansive range areas, training areas, and impact areas
- 11,000' runway, 9,000' taxiway with operational run-up areas and direct access to taxiway -- includes power, fiber, and grounding points
- 800 foot tactical runway and hangar
- Dedicated test trailer containing conference room, classroom, office space, data acquisition system (DAS) and a Tactical Sensitive Compartmented Information Facility (TSCIF)
- 6 hangar complex ranging from 6k to 12k square feet - total 51k square feet
- Staging Areas suitable for systems such as Gray Eagle, Warrior, Hunter and Shadow
- Capable of conducting Unclassified, Classified, and Proprietary testing

MAJOR ASSETS

- Army test mission priority restricted airspace 1,299 square miles from surface to 58,000 feet MSL
- Army PM UAS air and ground equipment including Gray Eagle, Warrior A, Hunter, Shadow, Universal GCS (UGCS) and One System Remote Video Terminals
- Mobile Command Posts
- EO/IR, and Laser Target Boards, autonomous vehicle, track and wheeled vehicles
- Ground Base Sense & Avoid (GBSAA) Test Bed with Two L-Star Radars
- Fiber reallocation shelter to maximize fiber backbone flexibility
- Portable Antenna Towers

As a result of pre-established agreements and risk assessments, timeline from first call to start of user testing can be as quick as six weeks.

V. Environs and Facilities



FIGURE 2: MICHAEL ARMY AIRFIELD

A. Dugway Test and Support Facilities and Michael Army Airfield (MAAF)

The Army's Dugway Proving Ground (DPG), as a Major Range and Test Facility Base (MRTFB), is ideal for aviation related testing. The main airfield features a lighted 11,000 X 150-foot runway with RNAV and TACAN Instrument Approach Procedures, a 9,000-foot taxiway, and a 20,000-square-foot storage hangar. Flight advisory services with limited ground support is available. MAAF is equipped to handle commercial and military aircraft.

Michael Army Airfield advisory can support manned aviation and manned/unmanned teaming (MUM-T) with Notice to Airmen (NOTAM).

Manned aviation capabilities include aircraft deicing and Aircraft Rescue and Fire Fighting (ARFF) capabilities.

An anchor based arresting cable is available on the approach end of Runway 30 for emergency use.

B. Airspace

MAAF is located within DPG's 1,299 square miles of Army priority restricted airspace (R-6402) from surface to 58,000 feet above Mean Sea Level (MSL). Dugway is adjacent to the Utah Test and Training Range (UTTR), which includes 7,954 square miles of Air Force restricted airspace. The UTTR is divided into North and South ranges (along the I-80 corridor in Tooele County) with a footprint of 2,675 square miles of ground space encompassing over 19,000 square miles of air space when combined with the Military Operations Areas (MOA).

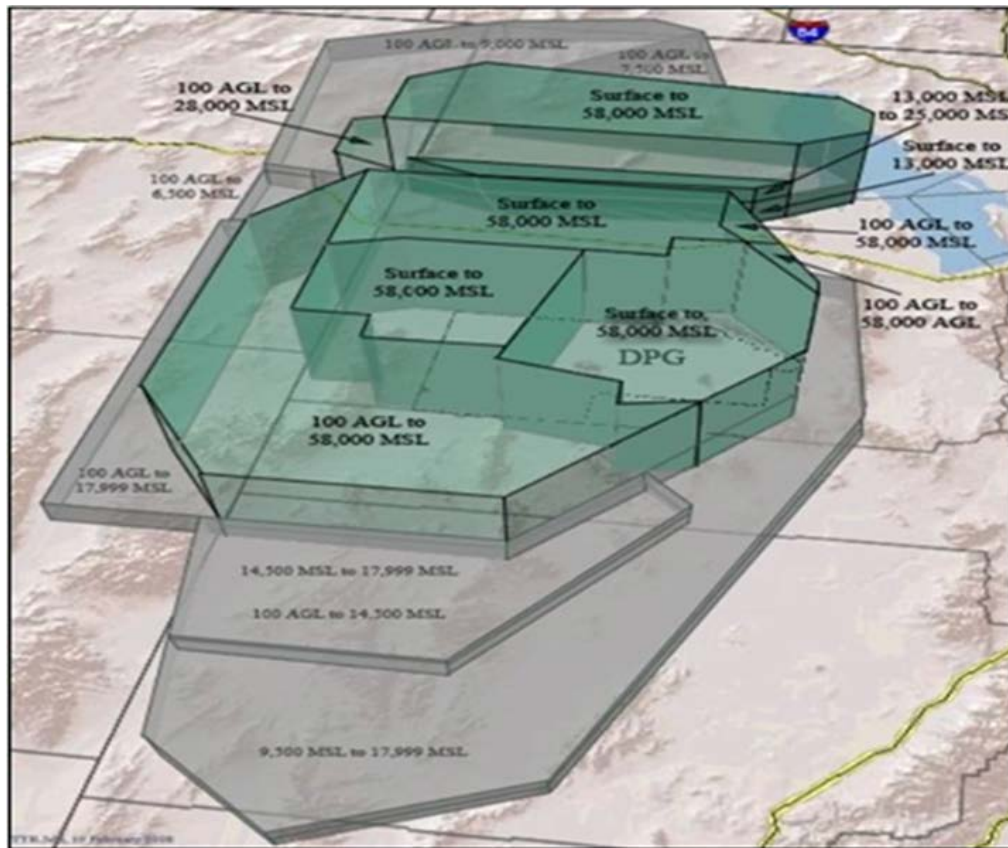


FIGURE 3: LARGEST OVERLAND CONTIGUOUS RESTRICTED AIRSPACE ON THE CONTINENT

C. Rapid Integration and Acceptance Center Facilities



FIGURE 4: RIAC HANGER FACILITIES

Michael Army Airfield is the home of RIAC which features six dedicated hangars totaling 51,000 square feet (varies sizes from 6,000 to 12,000 square feet) in support of testing, maintenance, and training operations.

Multiple operational staging areas for various UAS, from tactical to full support facilities including concrete Ground Control Station (GCS) pads, power, fiber and copper communications. RIAC has an 800 foot asphalt Tactical Strip (TACSTRIP) with 75' x 48' Large Area Maintenance Structure (LAMS) hangar.

D. Weather

Although, we can't control the weather, winter snowfalls are typically light (17 inches on average annually). RIAC is actively engaged to reduce the impacts of bad weather by supplementing the airfields snow removal processes. RIAC contributes a crew on call during winter months, an additional four trucks with 10' plows, two dry deice spreaders, and a 500 gallon liquid deicer for very low temperatures. RIAC partners with the meteorological division for early detection of weather conditions to allow pretreating the runway to prevent icing conditions in advance of a storm.

These efforts have significantly reduced "weather down days".

E. Building Facilities and Equipment

1. RIAC Test Trailer and Tactical Sensitive Compartmented Information Facility (T-SCIF)

The RIAC Test Trailer provides users an expansive 2,880 square feet of dedicated space. The test trailer can be utilized as a Mission Control Center (MCC) offering a Data Acquisition System (DAS), a Data Archive and Recovery (DAR) system, data distribution across the Defense Research and Engineering Network (DREN). The test trailer is also equipped with large screen monitors, and dedicated work space. The test trailer can be sectioned off to create a variety of useful work spaces and includes a conference room (for classified or unclassified meetings), office space, restrooms and a break room with a kitchen.



FIGURE 5: LARGE TEST TRAILER CONTROL ROOM (UNCLASSIFIED)

From a communications perspective, the Test Trailer features an integrated fiber optic range test support network for data, audio, video collection and dissemination. It also has full Broadband internet, landline telephones, a Land Mobile Radio (LMR) base station, and a Verizon cell phone extender to boost reception. Additionally, the Fiber Reallocation Shelter (FRS) allows test team to activate dark fiber at desired locations for unique test requirements within the airfield area. This robust data acquisition and distribution capability makes RIAC unique in test support facilities.



FIGURE 6: SMALL TEST CONTROL ROOM (CLASSIFIED IF REQUIRED)

Adjacent to the RIAC Test Trailer is the T-SCIF for classified meetings and storage up to Top Secret Sensitive Compartmented Information (TS SCI) level.



FIGURE 7: T-SCIF AND CLASSIFIED STORAGE

2. Mobile Command Post

RIAC has three Mobile Command Posts available to support flight line and remote site test events. Each Trailer is 320 square feet, has portable power, HVAC, fiber connectivity with DSL broadband, WIFI, with two way radios that has Range/ATC communications.



FIGURE 8: MOBILE COMMAND POST

F. Real-Time Remote Data Distribution

Remote data distribution via the Defense Research Engineering Network (DREN) tunnel has been established between RIAC at Dugway Proving Ground and the Joint Systems Integration Lab (JSIL). This capability allows real-time data access to local Redstone team members without the added expense of TDY time at Dugway Proving Ground. This system includes the capability to transmit messages between the AV and GCS, payload information including Payload Video and STANAG data as well as Aircraft Operator, Payload Operator console video and Pilot Point of View video just to name a few.

G. Targets and Ranges

Targets

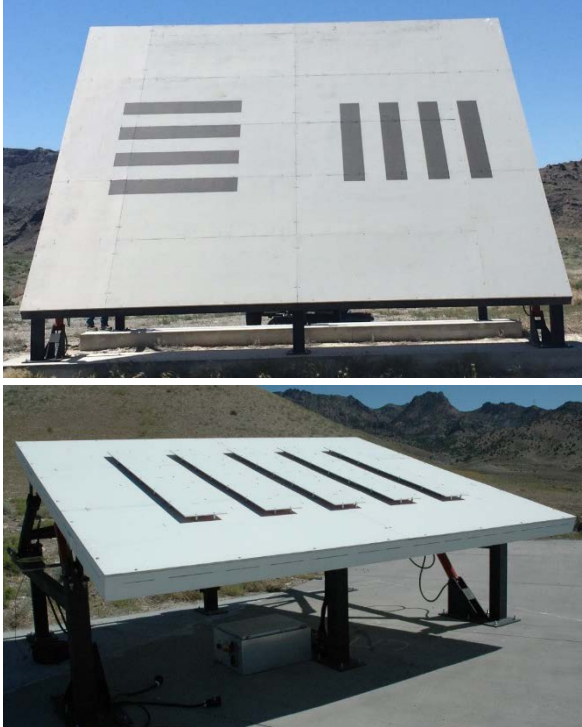


FIGURE 9: ELECTRO OPTICAL (EO) HORIZONTAL/VERTICAL TARGET AND INFRARED (IR) BAR TARGET BOARDS

Electro-Optical (EO), Infrared (IR), and Laser target boards can be set with different inbound headings providing approach target runs of up to 30 kilometers.

The IR Boards are designed with thermocouples and can heat or remain thermally static to produce a delta between IR panels and background. The thermocouples are regulated and target data can be recorded and later analyzed.

Laser Target Boards have specific paints providing high reflectivity when illuminated by a laser. An IR camera is used to observe the laser spot (Designator, Pointer, or Range Finder) with images being sent via fiber to the Test Trailer or Command Post.

Unique target boards can be built to customer specifications.

RIAC/DPG has ranges, targets, training areas, and impact areas available for users. Existing targets can be positioned throughout the range and/or fabricated and positioned by RIAC to meet user requirements.

Targets available include:



FIGURE 10: LASER TARGET BOARD

- **Thirteen UAS Targets on Test Range**
 - Reliable, low-maintenance targets allow multiple tracking operations with minimum reconfiguration
 - Variably-sized targets have adjustable target angle: 0% to 90%
- **Laser Targets (2 ea.)**
 - 16'x16' Stationary Boresight Board
 - Equally reflective contrasting colors
 - Registration marks for laser alignment and calibration
- **Infrared (IR) Targets (5 ea.)**
 - Recognition and/or detection testing
 - Variable temperature gradients
- **Electro-Optical (EO) Targets (6 ea.)**
 - Recognition and/or detection testing



The RIAC autonomous target enables safe moving target engagements during live fire events. This unmanned truck allows pre-planned multi-direction and speed runs (up to 55 mph).

RIAC high-speed cameras and partnership instrumentation providing state of the art Time, Space, Position, Information (TSPI) for weapons scoring.

For users requiring actual threat vehicles for testing, RIAC can coordinate for vehicles such as threat tracked vehicles, trucks, etc.

Ranges

RIAC working with WDTG Range Control or Special Programs Division, has access to a wide variety of testing, training, and impact areas including artillery, mortars or missiles ranges. Along with the “miles and miles” of varied desert and mountainous terrain, there are unique ranges useful for manned and unmanned aircraft sensor testing or training. Combat maneuver areas across the range can be used for a variety of testing and training events.

H. RIAC Storage

RIAC has a variety of storage facilities available to users for test receiving, shipping, staging and temporary storage. The RIAC storage Large Area Maintenance Shelter (LAMS) is 5,400 square foot with 576 square feet of rack storage sufficient for 36 pallets. Within RIAC hangers are 3 securable storage cages that are often available to users – two of which are 100 square feet, and the third being 400 square feet. The 7,500 square foot equipment shelter LAMS has a 3,750 square foot area with climate control for storing environmentally sensitive items.

VI. Resident Unmanned Systems and Other Ground Equipment

A. RIAC Unmanned Systems Equipment

Although equipment comes and goes through the RIAC regularly, the below is a typical listing of equipment on-hand. Using PM UAS system equipment requires advance planning for PM concurrence. It is possible other PM UAS equipment and subsystems may be scheduled for use given ample coordination time.

Gray Eagle Specific

- MQ-1-C Gray Eagle aircraft, 2 each
- Ground Control Systems/Universal (UGCS), 2 each
- Tactical Common Data Link-Universal Ground Data Terminal (TCDL GCS), 2 each
- Ground Control Systems (GCS)
- Ground Data Terminal (GDT)
- Half Rack Maintenance Systems for Gray Eagle
- Universal Ground Control Systems Simulator- One Unit installed in General Atomics Operations Trailer.
- Remote Link Module (RLM) – Five Units

Hunter Specific (C-Band equipped)

- MQ-5 Hunter aircraft, 3 each
- Ground Control Systems (GCS), 3 each
- Ground Data Terminal (GDT), 3 each

Sky Warrior Specific

- Sky Warrior Alpha Aircraft, 2 each
- Ground Control Systems (GCS), 2 each
- Ground Data Terminal (GDT), 2 each
- Portable Ground Control Station (PGCS)
- Half Rack Maintenance System for Sky Warrior Alpha aircraft 2
- Training Simulator- One System installed in one GCS

Shadow Specific

- Ground Control Station (GCS)
- Portable Ground Control Station (PGCS), 2 each
- Ground Data Terminal (GDT)
- Portable Ground Data Terminal (PGDT)
- Launcher (LAU)
- Tactical Landing System (TALS), 2 each
- Payload, POP 300D, 3 each

Universal Product Related

- Tower Trailers, 2 Each. 56 feet high, they are self-powered and are capable of being outfitted with antennas to suit the user's needs. For Army UAS tests, are most often used with a GDT.
- Multi Directional Antenna System and One System Remote Video Terminal (MDAS & OSRVT)
- Arresting Gear, 10 each
- OSRVT (Rover 6), 2 each
- Mobile Power Units, 3 each



FIGURE 12: TOWER TRAILER WITH PGDT MOUNTED

B. Other Ground Equipment

RIAC has a variety of heavy equipment to assist users in loading, transporting, and setting-up equipment. This includes 5-Ton flatbed vehicles, half-ton all-wheel-drive trucks, forklifts, flatbed trailers, a Tele-Handler, and generators. RIAC has taken steps to reduce winter's impacts by supplementing the airfields snow removal capability with an additional four trucks with 10' plows, two dry deicer spreaders, and a 500 gallon liquid deicer spray tote.



C. Training Equipment and Facilities

Flight Training Missions are conducted almost daily supporting one or more of the Army UAS programs (Gray Eagle, Warrior Alpha, Hunter, and Shadow). Ground Control Stations (GCSs) with full UAS simulators for operators training can be available (upon coordination through the PM), but the type and quantity vary.

Classrooms are limited at RIAC. For short term training needs, the Test Trailer's classroom and conference room are often available. RIAC Product Leads can assist users in scheduling the above training assets.

VII. RIAC Staff and Test Support Personnel

Every RIAC team member is cross-trained, experienced and knowledgeable in planning, facilitating, and executing a wide variety of user tests, training events and demonstrations. Every member of the staff is expected to be an advocate for the user, committed to mission success! Critical staff activities include:

RIAC Director: Has oversight of all RIAC activities and operations with responsibility for building and maintaining "partner" relationships as defined in section V., the Army UAS Project Office and liaison with local and state government officials.

RIAC Site Coordinator: Manage communication and process by coordinating with RIAC Liaisons, Product Leads and Operations Coordinator for successful operations. Develop Standard Operating Procedures, DPG access control, oversee security, anti-terrorism, safety programs and perform duties required as RIAC OPSEC Officer and as Primary Administrative Custodian for RIAC's Classified and COMSEC Containers. Host VIP visits, tours and events.

RIAC Sr. Operations Coordinator: Synchronizes all RIAC resources to ensure equipment, manpower, airspace and range are properly planned for in long range schedule and available for daily operations and test requirements. This includes integration of RIAC, Dugway, West Desert Test Center, and UTTR testing and training assets.

Sr. Test Engineer/Technical Lead: Coordinates each test to assist in defining overall support requirements. Coordinates with RIAC Operations for scheduling of both RIAC and partners resources. Ensures test plans and test execution are within Safety of Flight requirements, develops execution timeline and task tracking for each test event while completing required DPG documentation and risk assessments.

Test Control Officer (TCO): Assigned to each test event to ensure compliance with range regulation and safe, successful mission execution. Works closely with Test Support during test planning; responsible for setup, execution and retrograding RIAC tests.

RIAC UAS Product Leads: Oversee ground execution for all aspects of Government Owned and Contractor Operated (GOCO), testing, training, and acceptance tests. Daily operation consist of, but are not limited to, Hunter, Warrior, Gray Eagle, and Shadow Unmanned Aircraft Systems. This includes scheduling facilities, airspace, ranges, targets, frequencies, network, video, and equipment based on individual flight mission needs. Also coordinates and manages COMSEC, frequency assignments, and often are assigned as Test Control Officer (TCO).

Field Support: Offers field support to all training, tests and operations. Operates test equipment and variety of targets.

Logistics Lead: Schedules and handles user funded shipping and receiving of equipment and supplies by coordinating through the Dugway supply point, including the movement of munitions through the Dugway Ammo Supply Point (ASP). Responsible for all RIAC property accountability.

Equipment Manager: Coordinates and executes the set-up of test sites, ensuring computer and internet operations in CPs, sets-up laser ranges and laser target boards, builds targets fixtures, and moves target vehicles to test sites. Also responsible for maintaining RIAC equipment including scheduling preventive maintenance checks.

RIAC Office Manager: Provide daily administrative and operational support to the RIAC staff, track and maintain DPG permanent badged personnel and RIAC visitors. Manages data entry in scheduling systems.

Facilities Manager: Facilities maintenance and management in support of training, tests and operations. Acts as Building Responsible Officer (BRO) to ensure compliance to installation facilities requirements.

Matrixed Personnel Assigned To RIAC

Resident Government Flight Representative (GFR): A resident AMRDEC GFR provides government oversight of contractor flight and ground operations and provides all users assistance/expertise in general flight operations safety.

West Desert Test Center (WDTC) Liaison: After coordinating with RIAC users on their test plans, directly schedules WDTC resources. Continually works with users and WDTC to resolve issues and de-conflict problems.

Network Enterprise Liaison (NEC): Liaison to the NEC in direct support of RIAC Information Technology (IT), Spectrum Management, COMSEC support and IT infrastructure support.

VIII. Annexes

A. Representative Costs

Every test and demonstration at RIAC is unique. The costs described below are representative of historical test costs averages from 2012 to 2015 for the testing categories shown for budgetary planning purposes only. A more complete description of each test category can be found on page 2.

In the table below:

- The second column, “Per Week”, **does not include a flight crew** (assumes user brings own equipment and flight crew)
- Contractor flight crews can start as low as \$35,000 per week.
- These costs are all inclusive to include a 40 hour week, air and ground vehicle fuel, utilization of the test trailer, support personnel, and target and ground support based on the test event.
- These numbers are a rough order of magnitude for budgetary purposes only; a full and complete estimate will be provided after discussions and solidification of a complete requirements document agreeable to both the user and RIAC.

Test Category (Based on historical data from 2012 to 2015)	Per Week
Weapons Test	\$34K
Electronic Attack/Electronic Warfare, Signals Intelligence	\$14K
Communications	\$12K
Engineering/Developmental Trials	\$27K
Intelligence, Surveillance, Reconnaissance Payload Trials	\$17K
**Chart created 2016, assume average annual increase 3% due to Cost of Living Allowance (COLA) for labor support.	

B. RIAC Test Partners

1. West Desert Test Center (WDTC)

WDTC is a Major Range and Test Facility Base (MRTFB), with a primary mission to provide developmental and production test support to the nation's chemical and biological defense programs. Partnering with the WDTC Liaison, direct coordination is completed with range control, airfield services, explosive ordnance, and security services support.

Other WDTC services included in the InterService Support Agreement (ISSA) with RIAC include:

- Meteorological Branch provides weather forecasts and planning assistance providing warnings for surface and upper-air disturbances, near real-time Atmospheric Transport Dispersion (ATD) modeling, and a wide array of data collection instrumentation.
- Data Imaging Branch offers a full menu of optical products and services with capabilities ranging from still photography to state-of-the-art active and passive remote detection. Branch technicians produce standard definition, high definition, and high-speed video in both fixed-view and tracking modes. Thermographic data collection services using infrared cameras can be obtained for normal, low-light, and obscured conditions, including precise temperature measurements ranging from -40 degrees centigrade to 1,500 degrees centigrade.
- Range Support supplies civil design services and construction of grid infrastructure, including construction expertise for customer test fixtures and facilities, soil excavation, road grading, heavy equipment operation, and heavy lifting to 40 tons. Range Support also provides electrical/power design for test apparatus, fixtures, and test grids.
- The Explosives Test Branch maintains and operates explosive systems. Certified operators handle and transport munitions, explosives, ammunition, and ammunition components, as well as locating, recovering, and disposing of unsafe munitions.



FIGURE 13: ALL CLASSES OF UAS ARE TESTED AT RIAC ALONG WITH MANNED/UNMANNED TEAMING INTEGRATION AND TESTING

2. Network Enterprise Center (NEC)

RIAC has a dedicated Liaison to assist coordination for NEC support. NEC overall mission is to provide support to implement and execute effective Command, Control, Communications, Computers, and Information Management (C4IM) common-user policies, standards, architectures, programs, plans and budgets for communications, information assurance, and automations support. For the RIAC, examples of assistance included in the Service Level Agreement (SLA) include COMSEC, IT infrastructure, range radios, phones, and test support. Of special importance is

Dugway Spectrum Management. RIAC's liaison works with the installation Spectrum Manager to provide RIAC with annual Radio Frequency Authorization (RFA) assignments to conduct daily operations. Utilizing annual RFA's, RIAC prioritizes, manages, and assigns frequencies for use to RIAC users.

3. Dugway Garrison

Garrison provides base support including Family and Morale, Welfare and Recreation (FMWR), lodging, real property planning, fire and emergency services, environmental conservation and compliance, physical security, utilities and maintenance.

4. Mission and Installation Contracting Command (MICC)

RIAC's ISSA with the Dugway MICC provides responsive contracting solutions and oversight.

5. Logistics Readiness Center (LRC)

The LRC provides maintenance, supply, and transportation services in support of the RIAC mission. LRC oversees the RIAC GSA fleet.

6. 88th Regional Support Command (RSC)

RIAC partners with the 88th Regional Support Command (RSC) for overflow maintenance and supply support. The 88th will routinely send a satellite maintenance team to provide scheduled maintenance for mission critical equipment that must remain on the flight line.

7. Utah Test and Training Range (UTTR)

The UTTR is assigned to the 388th Fighter Wing at Hill Air Force Base, Utah. The unit schedules, operates, and maintains the UTTR as a DoD Major Range and Test Facility (MRTFB). Air Force airspace is adjacent to the Army priority airspace. RIAC acts as a facilitator with both the Army and the Air Force MRTFB's to provide all encompassing support to their and our customers. The UTTR provides an ideal location for operational test and evaluation for weapons requiring a large safety footprint and telemetry, video, voice, and data communications systems. The combined resources offer an expanded level of support unique to the country.

8. Redstone Test Center (RTC)

The Redstone Test Center (RTC) is an Army Test and Evaluation Command (ATEC) tenant activity on Redstone Arsenal, Alabama providing test and evaluation support for aviation and missile users. RTC provides technical expertise to plan, conduct, analyze and report the results of tests on aviation, missile and sensor systems, subsystems and components. RTC has a matrixed Test Liaison within PM UAS office.

9. Joint Systems Integration Lab (JSIL)

The JSIL support tests, demonstrations, development, and integration activities requiring Shadow, Gray Eagle or Hunter assets or expertise and integrates-coordinates JSIL organic assets into environments/test beds required for events. In

cooperation with RIAC, it coordinates SMEs and Agencies to support systems and can augment Prime Contractors and RSA flight line test capabilities.

10. U. S. Army Aviation and Missile Research Development and Engineering Center (AMRDEC)

A subordinate organization to the Research, Development and Engineering Command (RDECOM), it is the Army's focal point for providing research, development, and engineering technology and services for aviation and missile platforms across their lifecycles. Competency areas include Aviation Systems Technologies, Missile/Rocket Technologies and system life cycle engineering. AMRDEC has matrixed a Government Flight Representative (GFR) to oversee all RIAC contractor operations providing safety oversight to multiple activities simultaneously.

11. Target Management Office (TMO)



The TMO falls under PEO Simulation, Training, and Instrumentation (STRI). Under the TMO agreement, RIAC conducts routine maintenance and operates the TMO threat targets (such as BTR 60s) in support of tests with the ability to quickly reach back to TMO for unique target requirements when needed.

FIGURE 14: A VARIETY OF THREAT VEHICLES CAN BE COORDINATED FOR USE

12. Wendover

Wendover Airfield is a commercial airport located on the Utah/Nevada border between the UTTR North and South Range areas. Topographic conditions allows direct line of sight from Michael Army Airfield to Wendover airfield (approximately 60 nautical miles) permitting long range communication testing. The partnership with Wendover Airfield offers RIAC the ability to set up instrumentation, equipment, Petroleum, Oils, & Lubricants (POL) and other facilities as needed.

13. Current Equipment Manufacturers

RIAC consolidates multiple contractor integration, test, and training activities at one location to improve interoperability and efficiency of assets. On-site contractors include:

- General Atomics Aeronautical Systems, Inc. (GA-ASI)
- Northrop Grumman Corporation
- Textron Systems Corporation

C. Dugway Proving Ground History, Location, Setting and Climate

History of RIAC

In 2008/2009 the U.S. Army Unmanned Aircraft Systems Project Office (PM UAS), headquartered at Redstone Arsenal, Alabama, initiated the search to identify a location to consolidate their flight missions in order to rapidly meet Warfighter needs. This initiative would significantly reduce overhead expenses while increasing productivity and R&D capability. PM UAS identified and started surveys at the following locations; Yuma Proving Ground, White Sands Missile Range, Redstone Arsenal, Dugway Proving Ground (DPG), Fort Huachuca, Outlying Field-Choctaw and Bogue Field, Cherry Point.

In March 2009, Senator Orrin Hatch (R-UT) sent a letter to the Vice Chief of Staff of the Army, General Chiarelli, requesting DPG be evaluated as a potential location. With a combination of the support from the State of Utah and availability of restricted airspace, DPG was selected.

RIAC flight operations started in June 2009. On September 23, 2009, Rapid Integration and Acceptance Center (RIAC) had ground breaking ceremony as a tenant organization at DPG.

Dugway Proving Ground Early History:

On February 6, 1942, President Franklin D. Roosevelt withdrew an initial 126,720 acres of Utah land from the public domain for use by the War Department. Six days later Dugway Proving Ground (DPG) was established, with official activation on March 1; testing was underway by summer.

After World War II the facility was deactivated, but DPG resumed active status in 1950 and a boom of construction and testing followed. Dugway Proving Ground is currently aligned under the U.S. Army Test and Evaluation Command (ATEC), Aberdeen Proving Ground, Maryland.



Biological defense testing

Today, Dugway is a Major Range and Test Facility Base (MRTFB), with a primary mission to provide developmental and production testing to support the nation's chemical and biological defense programs. Dugway's West Desert Test Center (WDTC) features physical and human resources that create an exceedingly diverse test facility meeting a broad spectrum of continually evolving test and evaluation requirements.



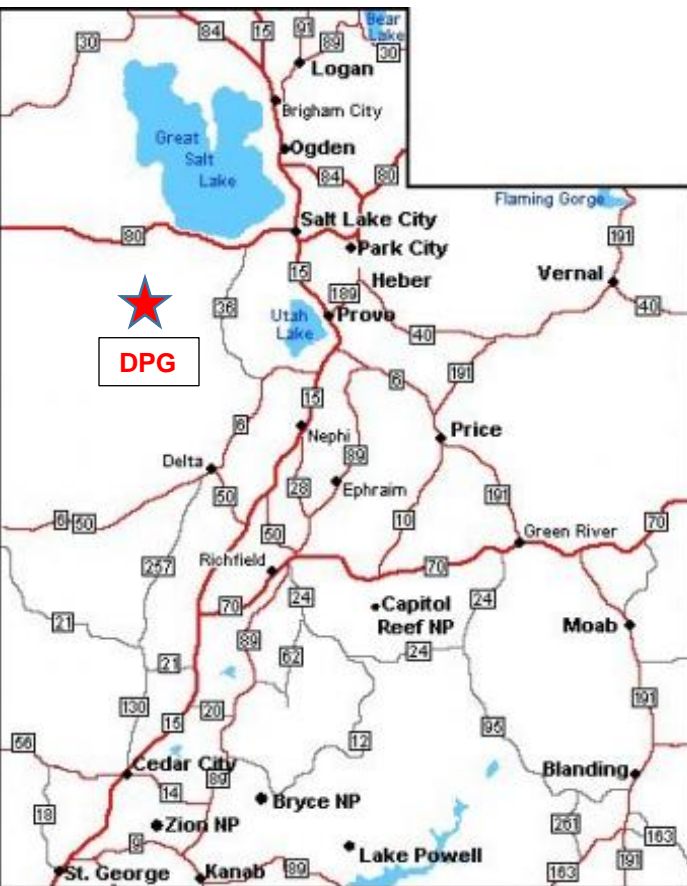
Dugway Proving Ground – Setting

Situated about 75 miles southwest of Salt Lake City, Utah (Tooele County), Dugway Proving Ground consists of 797,974 acres of Great Basin terrain ranging from level salt flats, to intermittent sand dunes and rugged mountains. Adjacent U.S. Air Force gunnery and bombing ranges extend Dugway’s restricted airspace to an area of about 90 miles

by 70 miles and up to an elevation of 58,000 feet.

Dugway’s 1,252 square miles of sparse desert and restricted airspace provides freedom from urban encroachment, ensuring distinct and versatile advantages for test planning and execution. Additionally, the DPG test grids and ranges are free of light pollution, acoustically and electronically quiet contributing to a test-friendly climate. DPG’s average elevation of 4,350 feet above sea level is characteristic of its Great Salt Lake Desert locale but is punctuated by craggy peaks, including 7,082-foot Granite Peak in the center of the installation.

Dugway is bordered to the northeast by the Cedar Mountains and to the south by a series of ranges and valleys, the closest of which is the Dugway Range. Extensive basin areas are broken by the topographic



relief of the Cedar Mountains, Little Davis Mountain, Simpson Buttes, Camels Back Ridge, Wig Mountain, Granite Peak, and Sapphire Mountain.

Vegetation and animal life is consistent with that found throughout the Great Basin. Small desert plants and hardy grasses and brush are plentiful, with sage and salt brush throughout most of the range. The range also supports healthy populations of wild mustang, pronghorn antelope, mule deer, coyote, bobcat, kit fox, and a variety of rodents. Owl species, especially great horned owl and burrowing owl, along with hawks and eagles are perennially found on post.



Dugway Proving Ground – Climate

For most of the year, Dugway Proving Ground experiences a moderate, high desert climate. Summertime highs regularly exceed 90°F, but low humidity (average 59%) levels yield pleasant daytime conditions and cooler evening temperatures. January is the coldest month on post, with an average minimum temperature of 16°F and average maximum of 37°F.

Springtime rain makes up the majority of Dugway’s precipitation, which averages between six and seven inches annually. Winter snowfalls are light (17 inches average), but not infrequent.

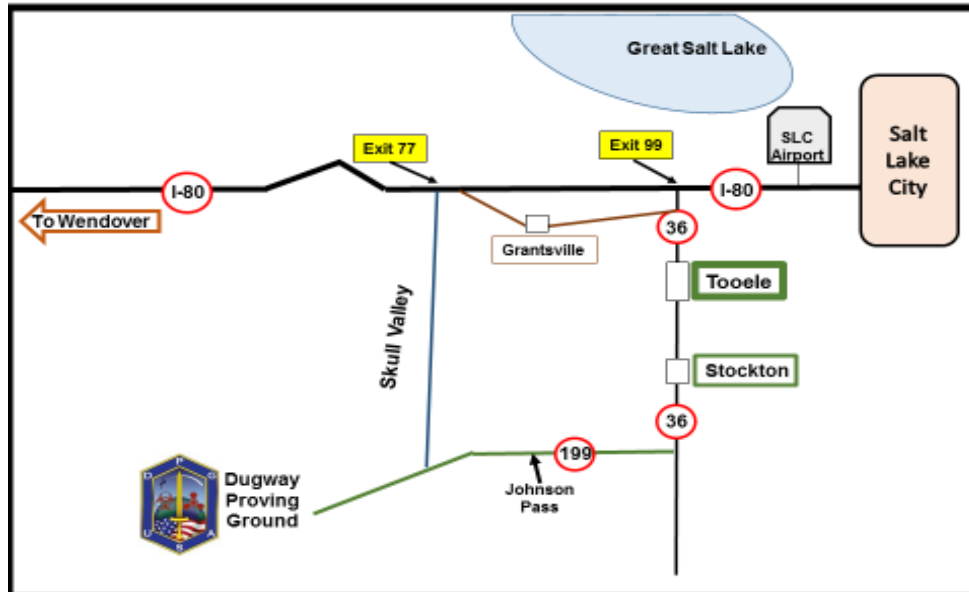
Weather patterns and prevailing winds at Dugway are strongly influenced by its terrain. Prevailing winds are from the northwest during afternoon hours and from the southeast at night and during the morning hours. The salt flats along the western and northwestern borders create a contrasting land surface, and the gently sloping terrain between Camels Back and Granite Mountains cause upslope or downslope winds. These processes largely determine the prevailing winds during the summer.

The pinnacle-like mountains interspersed in the flat terrain are cooler and receive more precipitation than surrounding areas. These mountains, along with the north-south oriented mountain ranges surrounding Dugway, influence local weather patterns by channeling winds and promoting up-and-down slope conditions in mornings and evenings, respectively.

Atmospheric conditions are typically pristine with surrounding mountain ranges 20-60 miles distant often visible. Visibility exceeds 10 miles about 95% of the time. Occasional hazy conditions are usually natural in origin, as Dugway rarely experiences the inversion conditions of nearby populated valleys.

D. Getting to Dugway Proving Ground & RIAC and Visit Request Information

MAP to DPG



Driving: Travel time from SLC airport to DPG Main Gate is approximately 1.5 hours with an additional 15 minutes to drive to Ditto area (location of RIAC offices and airfield).

US Army Dugway Proving Ground (DPG) is a controlled access installation. All RIAC visitors requesting access to DPG will be furnished our Visitor Request Form that will need to be filled out and returned to their RIAC POC one (1) week prior to their arrival date. All visitors without a CAC will undergo a screening through the National Criminal Information Center (NCIC). Foreign National (FN) visitors are required to submit their Foreign National Access Request paperwork no less than thirty (30) days in advance of their visit to their RIAC POC.

JPAS requests will be required only if the visitor will need access to classified information.



FIGURE 15: FRONT GATE GUARD STATION

RIAC's Visitor Information Packet, which includes maps, local hotels and miscellaneous DPG information will be furnished to visitors upon request.