THE AquaNAS

The ¹Aqua²NAS Droneport System is a patent pending network of floating UAV takeoff and landing platforms. The system is designed with a number of intuitive safety and logistics features which are equipped to accommodate and provide flight support services to UAVS under 55 lbs. The AquaNAS Droneport System is linked to a single mobile application using a series of software applications which will allow users to send and receive parcels light enough to be transported by UAV from any participating merchant or subscribed individual location to any point along the network. The AquaNAS hybrid infrastructure will consists of battery powered bicycles, electric automobiles, hybrid automobiles and the existing infrastructure of local and international courier services as well as ride sharing services to deliver parcels to a system determined AquaNAS Droneport location where the parcel is then transported via UAV for delivery. AquaNAS Droneport System platforms will be utilized for the purpose of maintaining a safer, more controlled environment for BVOLS (Beyond Visual Line-of-Sight) flights as well as takeoffs and landings. The AquaNAS Droneport System platforms will be temporarily constrained to delivery of items weighing less than 10 lbs. The most significant feature of the AquaNAS Droneport System is its total dedication to the use of the surrounding waterways and the open ocean as its main flight paths. The implementation of the AquaNAS greatly reduces BVOLS risks by eliminating the need of having to fly over people, private property and densely populated urban areas. Similarly, the AquaNAS creates *a safer flight environment* by not having to navigate through unpredictable urban canyons, a phenomenon mostly associated with modern cities and the existence of skyscrapers. Urban canyons or areas with tall structures may be responsible for *a loss in the data links between the aircraft and its pilot*, which ultimately can cause *a loss of control over the aircraft*. The exclusion of overland flights and investing in water based takeoff and landing UAV platforms also directly addresses the strong privacy and security concerns of local governments and citizens in a growing number of states. In contrast, AquaNAS flights and landings very rarely include contact with the general public as they are routinely routed over bodies of water. Initiating the AquaNAS Droneport System will be the first important step in bridging the gap of trust between Community, Industry and Regulators.

PLATFORM DESIGN & CONSTRUCTION

AquaNAS Droneports would be constructed in the following categories: Private, Commercial,

¹ AQUA. Water.

² NAS National Airspace System. The Federal Aviation Act of 1958 established the FAA and made it responsible for the control and use of navigable airspace within the United States. The FAA created the National Airspace System (NAS) to protect persons and property on the ground, and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS is made up of a network of air navigation facilities, ATC facilities, airports, technology, and appropriate rules and regulations that are needed to operate the system. In addition, this appendix details the various components of the NAS, and then describes how these components interact to facilitate safe and efficient air travel.

Government and Multipurpose / Community Droneport locations.

- 1. Private: Owned or Leased by a Single Property or Individual (Waterside Homes, Condominiums, Apartment Buildings.)
- 2. Commercial: Owned or leased to be utilized by one or more Businesses.
- 3. Government: Owned or leased to be utilized exclusively by Local, State or Federal Government
- 4. Community: Community Owned or Leased which will be accessible to both the General Public and Businesses.

All AquaNAS floating UAV platforms are designed to be easily installed *without the costly and oftentimes difficult construction process* associated with the traditional pylon supported dock structures. AquaNAS platforms use only the existing seawall as its anchor and *each platform utilizes a number of hinge and sliding rail components that allow the platform to adjust with the changing tides as it remains at its fixed location with minimal environmental impact. The amount and specific patterns of the takeoff and landing pads are custom designed and is dependent upon the volume of expected air traffic and requirements of each distinct location which can be increased and decreased in quantity as desired. Each AquaNAS landing and takeoff pad shall be equipped with <i>an assigned brightly illuminated identification number* that is easily visible by UAV pilots from hundreds of feet above, during daylight and nighttime hours of operations as well as in adverse weather conditions.

All landing and takeoff pads will maintain a bright strobe light illuminated by a circle surrounding the takeoff and landing area which is operated from either a manual mode or *activated automatically upon the detection of an incoming UAV*. All platforms also contain an illuminated windsock that UAV pilots will utilize as a navigational tool during their visual approach. Additionally, the assignment of a specific Identification number on each individual pad will provide a more streamlined approach to the process of *plotting safe fixed flight paths*. Another key feature of the AquaNAS Droneport platform is its incorporation of UAV Detection hardware and software that will notify merchants, customers, courier personnel, pilots and AquaNAS controllers of the system via mobile application when an anticipated UAV delivery has aarrived. All parcels will be tracked from the originating point of departure to the ending points every step of the way.

AQUANAS FLIGHT CONTROL CENTER

The Flight Control Center will consist of three main components, but is not limited entirely to these three main components:

- 1. UAV Manned Air Traffic Control and UTM / Unmanned Traffic Management systems within the AquaNAS assigned flight paths.
- 2. Maritime activity monitoring (Marine Traffic AIS), Coordination with Seaplane Bases, Heliports and all other manned low flight activities within and around the surrounding AquaNAS flight paths.
- 3. Manned and Remote Monitoring of takeoffs and landings at each AquaNAS Droneport location.

The mission of the combined UTM and manned AquaNAS Flight Control Center is to provide

the safest possible flight environment by monitoring all airspace, maritime activities and all additional hazards *located within and around the AquaNAS fixed flight paths*. It could be said that the job of the AquaNAS Flight Control Center is to safely keep UAVS in the AquaNAS assigned flight paths. The use of existing aircraft locating technology is additionally beneficial in providing an extra layer of safety to the system until the implementation and merging of much more advanced systems. All seaplane bases, heliports and high risk maritime activities located within the AquaNAS will be closely monitored by the AquaNAS Flight Control Centers and UTM. The monitoring of the AquaNAS will consist of but not limited to a combination of software applications i.e.; satellite, low level radar, UAV detection sensors, physical human interactions as well as a various assortment of video cameras strategically placed along flight paths and at the location of each waterside Droneport location.

Benefits of the System:

1. 24 hour delivery system

2. An Inclusive system made up of International Parcel courier services, ride sharing delivery services and local entrepreneur UAV startup delivery companies.

- 3. Creation of New Tech Jobs
- 4. Lower wait times for the delivery of items despite traffic conditions
- 5. Protection of Privacy, Safety and Convenience.
- 6. Low cost last mile delivery of items to locations near droneports