BHADALE GROUP OF COMPANIES - IT AND REAL ESTATE

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Defense Academy Catalogue Ver. 2.1

Bhadale IT Pvt. Ltd. (https://www.bhadaleit.com/)

Bhadale Group of Companies

Bhadale Group of Companies consists of:

1. **Bhadale IT Pvt. Ltd** is an IT and Computer Engineering subsidiary company

   This division provides consultation in areas of cutting edge technologies, research outsourcing, and software consultation related to data center and related engineering practices

2. **Bhadale Engineering Pvt. Ltd** is a multi-engineering subsidiary company

Bhadale Group has aggressive programs in place to serve the niche market. Below is related to cloud ecosystems

Bhadale Group, Defense Academy division

Defense is not about killing people, destroying enemy assets or damaging the earth resources. It is all about self help for survival and defending national resource, people and assets from enemy threat

Considering the upcoming conflicts with polarized countries, there is a need to prepare staged, theatre style warfronts that will minimize the impact of various weapons like nuclear, biological, thermal heats, poisonous gaseous, airborne diseases, space based weapons, satellite based beamed strikes, etc

All these need a long and short term policy and strategies that can be implemented either parallel, serially, or hybrid mode as the war progresses. How you plan to provide the prototypes, services and products and management using various tools like AI/ML, Quantum that will help to defend the incoming threats and also counter attack and deep attack across the borders against enemy targets.

There is a dire need of quantum and emerging technology talent all across the globe; especially certain sectors need the talent to ensure business continuity, to develop counter measure from quantum hacking, prevention of data thefts, and for newer product and service offerings to retain the market edge and competition. We have a dedicated division called "***Defense Academy***" dedicated to this sole purpose.

Need for innovation, sustainability and self-defense programs

Considering the threats with polarized, fool hardy war-monger countries, there is a need to prepare staged, theatre style warfronts that will minimize the impact from various weapons like nuclear, biological, thermal heats, poisonous gaseous, airborne diseases, space based weapons, satellite based beamed strikes, terror activities etc

All these need a long term and short term policy and strategies that can be implemented either parallel, serially, or hybrid mode as the war progresses. How you plan to provide the prototypes, services and products and management using various tools like AI/ML, Quantum that will help to defend the incoming threats and also counter attack and deep attack across the borders against enemy targets.

Various war games need to be known about what enemy will do in various combat situations. Being big is not always advantageous. Having a high and accurate effective use of resources is the need.

So the plan starts from here. Doing a SWOT analysis, an inventory analysis of the available capabilities and what we can use against these. For example, if enemy sends a nuclear missile how will you detect in advance (30 minutes max time) what will you do to counter that hypersonic missile and allow for minimum impact and loss?

We offer products and services for various defense stakeholders and industries that are tailored to the needs ensuring the safety and integrity of the nation

Details are provided in the following sections below
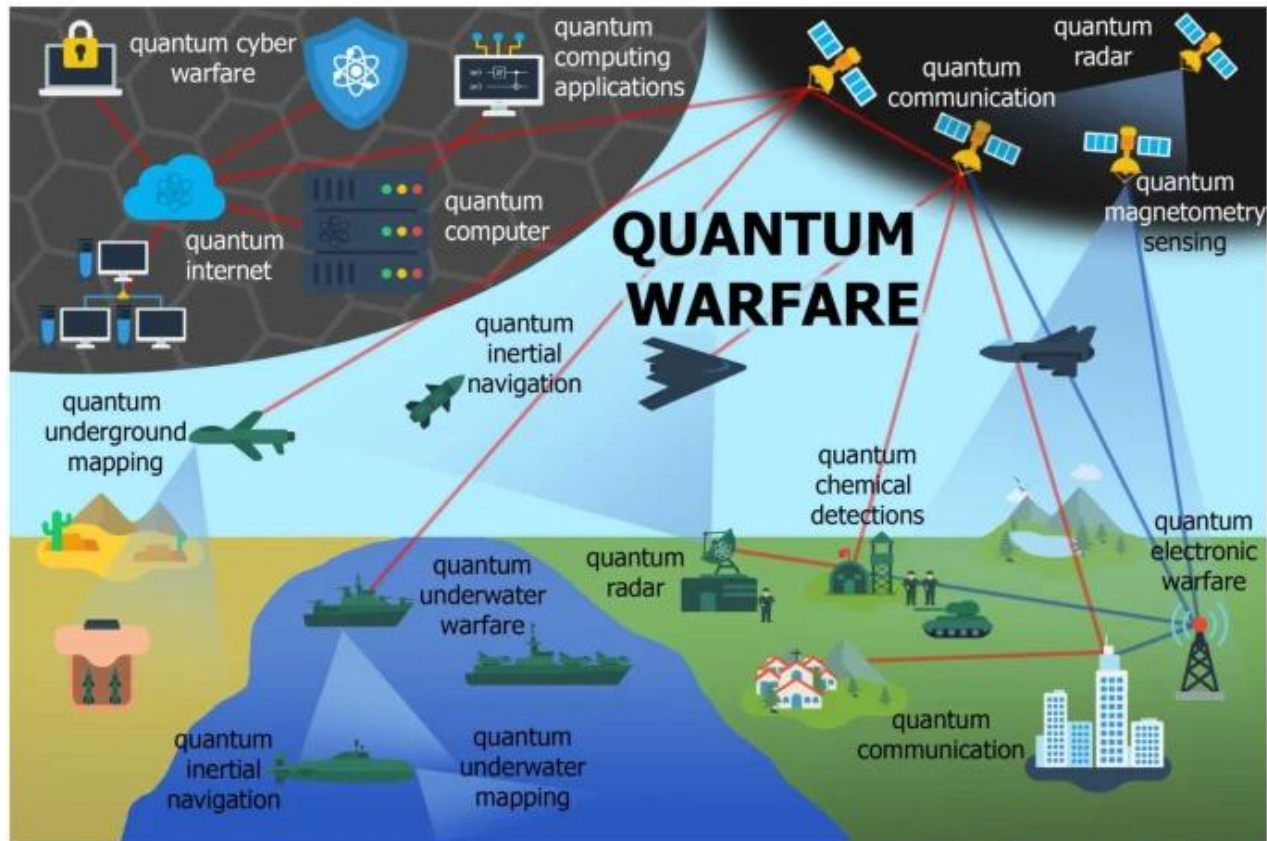
Offer details

Image Courtesy: EPJ Quantum Technology, Article number: 24 (2021)

We have a large set of subcategories; few are mentioned below with details tabulated

Offer No	Offer Name/ Mission / Goal	Key offer features / Products and Services
1	Protection, integrity and sovereignty of land, sea, space.	We offer products and services that enable nations to protect their sovereignty with utmost care. We offer integrated defense systems that allow real time quantum communications, intelligent missiles, tactical navigation systems that sense approaching threats as far as 500 kms to recourse their path using onboard quantum computer and quantum sensors, gyros and a variety of detectors that allow very high probability and near target hits. All these are driven by our highly intelligent command centers that can be auto piloted in case of staff being not able to reach or not in serving condition. We offer integrated command and control center, not just in one place, however they come in various forms and shapes

		that effectively serve the required purpose
2	Defend critical structures, wealth, assets from adversaries	We offer products and services that enable you to take care of the critical structures, wealth and assets using various options and tools. We offer design and development or ready to use tools that cover the engineering practices, digital security, governance and offer security monitoring, home automation, office automation, office premises management, personnel inventory management, financial and company assets strong store locks using intelligent and anti-hacker proof online verification by trusted party for physical access of the areas, assets, lockers that are within the company or home. We use post-quantum cryptography, digital technologies, anomaly detection, tampering cases, intrusion detection, historical evidences, ID verifications, visitors log and various gadgets and personal apps that allow you to take proactive measures and be safe For military staff we add more layers of security however those are not to bother the field staff, we integrate our tools with acceptable IDs, biometrics etc that can help
3	Goal is to win a war with minimum resources, dirty resources as needed, real missiles to real threats	Winning a war is not easy, it needs the decision from top authorities and buys out time and material. So it is another business however, one gets penalized in doing a wrong thing. For this we have ML tools that mimic the war, generates simulations, scenarios using GAN, uses penalties as a learning parameter and allows use of quantum computing for the NN that allow users to fine tune parameters to take the best decision and face the eventualities or accept or ignore based on the perceived risk
4	Real and fake attack identification, classification and interception with real or fake resources dispatch to counter the type of threat	We use exhaustive object identification techniques using various AI/ML algorithms that can be based on various features like size, thermal heat, velocity, drag, trajectories and the tail speed/wind, vector points and 100 other aviation parameters that allow us to identify if the threat is real or a fake missile is approaching. Based on this we prompt for the relative counter attack that matches or is of lesser value of the approaching missile, threat. Geo-tagged data, spatial data, spectrum data, various dimensional data, launch source point (genuine area), and historical evidences all enable us to classify the approaching target with minimum false positives. Upon automatic and manual inspection we offer you to counter the target, all in few seconds time

| 5 | Support continuity of livability, habitation of human areas, critical business needed to work in a degraded conditions and revival from catastrophic attacks | Similar to business continuity, we offer plans and designs that allow the defense sector from getting hit badly and allow the sector to continue with degraded or few of the not usable assets. We have back up plans, at least 3 distributed cloud based backups, virtual desktops, virtual command centers, virtual monitor and control and lots of Cyber Physical systems (CPS) that allow user to transfer assets from the virtual world to the physical worlds.

We offer partner services that will support the physical rehabilitation of the base camps, units, stations, mobile units to a different zone that is less susceptible to being targeted.

Along with this, it is possible to retain the same officer rank and allow to functions from different paradigms.

We offer partner services that will allow the repairs of the damaged units, mobiles, or even offer remote self-help kits, remote help via a small bandwidth channel like SMS or short images/ videos via dedicated signal channels. We plan to offer a matured NW with mixed or hybrid channel capacities and quality that can adopt intelligently based on the network behavior and user inputs. The NW can also shut down self in case of attacks using various methods like quantum no cloning method that can know if has been hacked / spoofed. A new set of keys are generated and shared if required without loss of data or compromised situations |
| 6 | Incorporate trust, honesty and facts that enable legal support for getting assistance and court win | For every activity that is being carried out, we offer logging of the events and incidents without compromising the channel quality. We use dedicated and shared nothing concepts that allow the same speed, quality and volumes

We offer partner services that offer forensic, evidence logging, monitoring that are in the form that are acceptable as legal evidences.

We offer services based on the request and not offer any personnel that do not meet your specified needs. We don't offer technician when engineers are called on, which is one of the most abused service offered by many corporate, just to please clients for sake of time saved, money saved etc .

We have AI explainable tools that inspect and study the details of the national polices, rules, laws and prevailing orders that allow defense staff to build trust in our offers |

7	Policy and strategies that can be implemented either parallel, serially, or hybrid mode as the war progresses along with expert AI/ QC based simulated responses	We have dedicated war game tools that allow real time inspection (manually or by our intelligent robotic agents) with lots of data points, data sets collected, assimilated, analyzed and presented to our clients. We have feed for forwarding time and events, reversing time and events and taking a decision for a immediate time based on the analyzed data feeds, manual feeds and any data from the public voices, reporters, field visuals, field radio inputs, data from every field based battle units Based on situations we offer various execution models either serially parallel or a mixed response that offer various inputs of the enemies strategies, possible retaliation acts, enemy data etc
8	Various tools at different levels like Enemy Next Move Predictor , Recommender engines for field level decisions makers	We offer various gadgets at field level, leader level, group level, troop level, all aggregated as the leader level goes up ensuring the same data is reused and aggregations are used at various levels. For example we offer only the required data to an IoT edge device that is integrated with a goggle of a solider consider the need, with an extension if required to pull extra data from a upper level officer or peer network. We offer different level and grades of network aggregation that can be disaggregated and recomposed based on a COMPOSABLE architecture and virtualization. Along with various classes of field staff and officers we offer mobile apps, gadgets and recommenders that allow personalization of the required data and volumes, similar to subscriptions.
9	Suitable GUI pages either web , offline of references for various needs, use cases and units	We offer design and development of various types of maps like geo maps, terrain maps, thermal maps, spatial location maps, target maps, ambiguous target maps, underground maps (Lidar, acoustics and triangulation), biological maps, human presence maps, preset library locator maps , routing maps, enemy camp maps, satellite maps etc All maps undergo various layers of resolutions, verifications and intelligence tests that make them true maps that can be trusted. The original sources are from federal provincial and military database and various source like satellite feeds, units and underwater precision locations. We use various types of data processing storage and

		communications via channels that are subscribed or preset on units for optimal rendering. These maps can be used for various purposes and use cases like drones, mission computer, navigational units, refreshing unit locations, onboard avionics, HUD helmets etc
10	Suitable digital papers with protection from hackers in reading the field reports, notes exchanged among trusted parties etc	We offer customized paper solutions that occupy less space, uses binary xml format, quantum security and allows in place editing for field staff in case of emergencies, auto lock mode when not in use of not opened securely using personal biometrics. We offer various e-signatures, digital signature, verifiers and secure channels to transfer data, text and various formats like xml, dtd, json using various quantum protocols and easily integrated into classical protocols and payloads. We use various compression algorithms, without quality compressions and decompressions that rely on master indexes and hashes, match dictionaries that use inference engines to match various hash codes , decoding methods enabling a wide source of document decompression
11	Suitable team of swarms, drones, UAV, unmanned submarine drones, automatic/ autonomous dispatchers, field cameras, field intelligence gathering missions etc	We offer planning and design services for various navigable units for air, space, and water bodies/ under water drones. Special units that are autonomous, intelligent , armed and capable of reconnaissance that can work on specific modes like data gathering, data dissemination, payload handlers, payload transporters (short and medium hauls), field assistances for various purposes like medical kit, food delivery, emergency responders etc
12	Suitable swarms of combat and non combat units/teams that can be mass produced/ assembled in a day's time	We offer special purpose vehicles that have lesser parts, easily 3D printable, and fast to assemble (using hand) within few hours time that can be air dropped, drone supplied or semi assemblies supplied that allow combat team to get supplies that might be exhausted within few hours. Short and medium term supplies of combat and non combat supplies is possible using our technologies Suitable use cases are 3D printed boots, safety jackets, all types of holders, protection gear for biological, nuclear hazards. These help field staff to remain safe at all times and can get aid in few hours time in case of surprises

13	Countering vector attacks either biological physical, or another form like gas, targeted cloud seeding, electromagnetic waves, sand waves, swam of insects, acid rain, intentional physical objects etc	We use quantum sensors all over the national space grids that allow early sensing of various types of attacks that enter nation's space either by land, air or water. For example , for swarm of locusts, plan to have an artificial duck/ other machine or real ducks that can kill and eat the locusts based on supply chain availability at the time of attack for countering the attack We use AI/ML/QC and various electronic gadgets, IoT and edge intelligent devices embedded chips at various strategic locations and monitoring mini devices that cover the required areas. For underwater, we plan to embed strategic points based on geo tags and submarine verified points , shore points, light houses, land mass and various international submarine cables that allow traffic
14	Generating jamming signals, fake signals, and fake missile launches, fake data that will make enemy dispatch their real missiles and bring loss. Have a traceable mobile unit to counter any real missile dispatches to hit the fake targets	We offer fuzzy logic, non-repeatable code generators , noise generators, jamming signals, signal cancelling waves, acoustic waves, photonics to shield from harmful rays etc We use identification of various signals and inbound targets using friend or foe technique using quantum communications and proprietary channels that can be locked only by friendly targets We offer AI/ ML/ QC to identify real and fake objects, real or fake missiles, fake data, fake formations etc that allow proper decision making and deploy relevant counter measures
15	Conduct a SWOT analysis, an inventory analysis of the available capabilities and what we can use against these. For example, if enemy sends a nuclear missile how will you detect in advance (30 minutes max time) what will you do to counter that hypersonic missile and allow for minimum impact and loss?	We offer various analysis and counter strategies against the enemy hostile moves. We offer manual brainstorming with experts in specific areas and combine the inputs from key stakeholders in generating a manual brain map, also fed to neural networks and intelligent mining algorithms that offload NP hard type workloads to quantum or classical supercomputers as required. We offer load balancers, manual feeds based on experts' opinion and possible commands from executives to refresh the solutions. Based on the war game and intelligent strategies, we offer various key and alternate solutions to counter the enemy with our best available match that matches the cost and impact and impending risks.

16	Gather required information, process data, analyze data and inform decision makers at various stages, and time intervals to ensure attacks, threats and predicted incidents do not materialize and compromise the integrity of the country	We offer macro and micro level data capture, analysis of various critical datacenter based data, data from various Govt agencies in arriving at a precise and well informed and well presented reports and live and continuous feedback on the emerging and evolving situations and updates. We offer various software packages, tools and GUI that are well integrated with the popular cloud platform, AI inference engines and Quantum computers that allow faster time to converge on the required search facts, relations among various entities and possible threats and counter attacks required as per the SWOT analysis
17	Protect the national interests that are genuine, true and not misleading.	We offer intensive research on the types of strategies that are being circulated among various agencies. We offer study and correction measured by analyzing the text, images and audio-video files using big data, AI, ML algorithms, quantum speedup, accelerations to bring in synergy among various departmental use cases, priorities that do not conflict or overruled by a different belief This is a massive exercise that needs time and labor to setup and automate the tools using various emerging tools for automation, intelligent mining and building relations and explainable AI to offer reasons where there are genuine mismatches, conflict of interest and something that can mislead the public or the mass into disbelief or mass hysteria created for internal revolts etc.
18	Impart training and practical to candidates who are not likely to misuse the authority to divert funds, power to non merit candidates	Knowing the staff better means building a trust worthy professional base that are not likely to cheat or divert away from leaders voice. With our talent tool we investigate the details and background of applicants that will allow them to undertake senior level courses, research and offer grants to those who qualify based on their honesty and trust worthy skills. We feel having the right staff attitude towards enemy is very essential that allows reasoning without bias of whatsoever enabling any unnecessary conflicts and also defending a great cause with no personal bias to any matters that can become a weakness to the nation and put the national security at risk.

19	Solution Cafe, tailored to the needs of the defense staff, enabling all have the right information, in time and approved.	We offer a Solution Café concept that is a high level framework for supporting various modules that can be extended and scaled to allow various divisions, departments, groups and other units for generating unique solutions that are suitable for the unit and also considers the common taxonomy and dictionary available for the entire organization Our solutions framework are developed using latest emerging tools like the Big Data, Industry 4.0, Quantum alliance frameworks, Enterprise frameworks, Cloud frameworks, Security frameworks and many more in house tools and simple techniques
20	Quantum products and services to meet various mission objectives, technology refresh, and supply chain.	We offer extensive services to cater to a wide variety of missions and objectives. We offer overlaid networks, extensions, scaled versions of classical models that allow interfacing the quantum paradigm to the legacy paradigm, offering the blended benefits factories that can serve various objectives and mission needs. For example, we support platform refresh to upgrade to quantum paradigm that will need a systematic study, consolidated, reengineering of systems and software as required to bring in the benefits from both worlds in a integrated approach
21	Prototypes from lab to production from TRL 2 to 5 and technology demonstration and production to TRL 7 using various agile and quick co-design and quantum lifecycle and hybrid cycles to shorten production time.	We offer various programs in approaching various technology, maturity and quality requirements. For example SEI-CMMI , Systems Engineering, Software Engineering, TRL levels and various industry standards from DoD, MIL, NIST, IEEE, ANSI, and ISO etc We specifically focus on the defense standards that are applicable to the products that we offer. For example a soldier gadget that leverages quantum cloud will have to have sound research proof at basic and applied levels, sound facts and figures and maturity to reproduce the lab facts into production with the state-of-the-art technologies.
22	Ready to use kits for quick assembly of inventories that are needed in field.	We offer various kit ideas especially that can be COTS product or in-house developed kit. For example, a 3D printed bullet proof garment , or a 3D printer surgical supplies like suture, sterile materials, wound strips , etc can be part of the first –aid kit

		A 3D printer controlled by a QC can help build a unique product that matches the needs of the wounded soldier and will have a highly effective rate of repair and quick heal.
23	A near infinite supply of essentials for field	It might appear impossible, however modern technology can do the impossible, it can generate water from air, can clean dirty water for safe drinking, and can provide energy harvested energy that can continue for a long time.
		For example, a soldier might need drinking water and needs a quick inspection of the water using quantum sensors, analysis of the threats and ways to clean the same. This can be fed to a QC with a sample that will analyze the specimen, analyze the available resources at hand or nearby area and give results in few minutes, for which the soldier can take proper action before the water become safe. It might take him to bring in few leaves to boil with the water that can cleanse it
		Reusability from the ambient to support infinite supplies is a big theme
24	Self sustaining assets like farms, mini manufacturing kits, and similar tools for prolonged supplies.	We have partners and resources that can be leveraged for sustainment.
		We have various programs for inter-disciplinary industries that allow better supply chains of resources, and goods that can be used for the defense staff. This can be a concept of the military canteen that can be modernized with various programs that overcome the various delays, non availabilities that can be filled using technology and ideas.
		Redoing a success story many time repeatedly can help sustainability without surprises or loss
		All the logistics, chains, delays, routings, approvals and any delay points are addressed using technology to remove them by effectively addressing them
25	Integrated supply chain optimization	We use AI/ML, graph optimizations, scheduling optimizations, inventory quantum search, quantum computing for NP like problems, TSP problems, and various unique tailored and personalized solutions that allow better monitoring, notifications and alerting of low stocks or changes in the demand-supply curves.
		We use various mathematical models, numerical analysis techniques, boosting techniques , and advanced planning

		and warning systems to enable better economic ordering at best available price sourced from various offshore or near shores
26	Various types of standby and reserve pools of resources	These are not mere products that are ready to supply; these are possible forecasted realistic production line capabilities that only need an engineering order to be produced and dispatched. So we offer various types of inventories that are physical stock, virtual stocks, virtual capabilities and reserves that can be used in course of short , medium and long time periods
27	Maximum use of AI,QC for up-gradation of existing assets for getting edge in the field operations	We leverage the emerging technologies and reengineer the classical systems to enhance them by various methods, like the overlay design, upgrades to newer protocols, impact analysis on classical and newer technology stack, backward compatibility and other integration related tasks conducted in a clean environment with various subsystems/ elements / modules being reassembled, conflicts resolved and better ways to interface and communicate will be offered using object or modular design methodologies.
28	Defense intelligence verification and normalizing using quantum, big data tech as per DoD norms.	We offer services that allow automation to gather, inspect and normalize data without much human intervention, reducing the human errors/bias, with expert review based on the quality and type of reports that are being generated. This enables secrecy of data and contracting of general automation jobs without actual data being exposed or leaked like SSN or personal data. We adhere to various quality standards and metrics and apply these to AI, Quantum and other technologies and avoid any pitfalls or leakage through test media or wireless transmissions that might put the data at risk.
29	Kill chain validation and other tamper proof using block chain and quantum technology.	We use various tools that verify, validate and notify for any issues, tested against various legal rules, laws, risky ventures and wrong doing beforehand. Before the actual command, executive orders and other leader decisions are put into action or into digital versions these undergo extensively test in few minutes before these are queued for notifying the staff and field commander. This helps in commands being falsely generated and disseminated without the proper authorities in the loop. Suitable strategies

		like Conesus, weighted based on ranks, priority criticality and the consequences, all being considered. We don't use brute force or high resources; however quantum and classical parallelism come to the faster convergence to the required action
30	Control and command centers in various forms and factors for use at various stages for carry on leader kit, drone control unit, robotic swarm control unit, data center control unit and Executive command units in real time.	We offer innovative ways of getting the commands to the right person at the right time, which is very critical for the proper action to take place. For example, we offer the command station from being in a small pen (effective in case of being captured) that transmits commands (either as per the commander or perceived threat SoS messages to nearby base camp). The command center can also be a secure mobile app, or a body garment or a chip embedded within body that is not easily tracked.
31	Aggregation and Disaggregation of data using unique fast conversion technologies, NoSql, Big tables, cloud interfaces etc	We offer advanced data management tools, techniques, algorithms, structures that allow faster aggregation based on various models and schemas that allow domain specific models, structures, data dictionaries to be aggregated using an integrated Sql / No Sql and hybrid data representations, shards, data storage (block level, file level), data indexing, deep/ shallow hierarchal models, and data retrieval mechanisms. We leverage on the big data concepts, big tables, de-normalized views working with normalized backend tables using Sql and No Sql maps, annotations and various data, graphs, and nodes optimization strategies that are usually NP hard with strict limitation on time domain for the CRUD operations, that allow real time operations and no phantom reads. We offer various maps that ensures the Disaggregation of the Normalized data does not loose quality or introduce errors or null values, we use virtualization, real time data cubes, and hybrid joins that do not make large scanning a necessary with our tailored indexing schemas and data arrangements in various types of table formats like graphs, tables, No Sql file folders , Object tables etc
32	QKD, post quantum cryptography, classical bridges, protocol mapping and offloading, quantum error management, state management	We offer QKD based communications with no-cloning repeaters and distillation to reduce errors. We use post-quantum cryptography to ensure the encoding

and decoding   is secure with the quantum inherent channel security.

Considering the overlay network design, we offer backward compatibility for the 4G/5G network and DoD/MIL compatibility. This ensures continued use of the existing systems with added benefits of the quantum communications. We use QRAM, QCPU and various quantum chips, devices and electronic systems that allow mapping of the classical CPU, GPU to the QPU and other elements.

| 33 | Satellite, Low orbit flying units, autonomous units, ground crew messaging, using quantum communication | We use a range of communications in the field that allows multiple channels and additional redundancy or backup secure channels for various topologies either point to point, visual range, long distance communication with modulation using AM/ MW for encoding digital signals for long distance communications, a hybrid mode of analog, digital signal processors etc

We offer multi hop, single hop, multiple interfaces , various geo located radio towers, mobile towers for 3 point well know location detection, various mobile devices, laptops and various corporate systems to be on boarded onto the battle field network allowing maximum reuse of the national assets in the battle field. |
| --- | --- | --- |
| 34 | Space threat early warning using quantum sensors, quick detection of hypersonic missile launches, enabling launch of swarm missiles to blanket the incoming missile and exploding them in the enemy space making the fallout within enemy territory | We offer strategic quantum gadgets like sensors, onboard QPU, secure communications, encryption, decryption using post quantum protocols that allow 100+ more sensitivity to ambient changes, presence of hostile entities and any threat detections that can inform the concerned authority of the impending threat.

We offer hacks for the superior missile systems by way of using a large number of low cost counter attacks like use of swarm of low speed missiles that can increase the probability of hitting an incoming hi-speed missiles

We offer strategies for early warning, detections and countering that will ensure the missile launched will land in the enemy country before reentering the space of our territory |
| 35 | Quantum Optimization plan for rerouting and scheduling under degraded performance, low resources at various levels from unit staff to field strategies | Using the alternate resources available at corporate, personal laptops, home servers, and other combat units, we route the radio signals securely based on the available free slots on any of these devices, by suing quantum search and |

	and executive decision.	schedulers that work in near real time.
36	HPC, supercomputer, mainframe computer used as hosting system with QPU as acceleration system for workloads from 10 sec to 60 sec decisions.	Most of the field level decisions are in seconds' regime, so also the quantum regime that works in the seconds slots. To ensure there are no delays, we propose use of various best-of-breed classical systems like HPC, supercomputer along with the quantum systems being used for acceleration for computing, search, data analysis and scheduling that will enable the most real time responses
37	Data classification, in ready-to-use state, based on defense and military formats, standards, datasets, and secondary, tertiary data for use as required.	We offer data management services that comply with various file formats, data storage, based on classified sensitivity of the content. We offer various mapping ad on boarding, off boarding of data as per needs. This allows for offline batch operations and going live as per needs, or getting offline to prevent any leaks. JIT, agile policies are leveraged We help defragmented dataset, data collected from various channels to be quickly read, formatted as per needs and staged, moved to production servers very quickly. This allow for any number of iterations provided the data is of good quality and does not need a large quality enhancement systems
38	Digitization of paper or offline data for real time analysis and data ready state.	We offer services that allow quick conversions, like OCR, text readers, text mining, text analysis and AI based inference engines that can infer lot of information for lexical analysis and further down to an intelligent robot that can bring in the Explainable AI type human type sense making We bring rich digitization experience to the end users that need quick data transformation from various channels like voice, text, images etc from the field officers and soldiers. This is a very important topic that is usually ignored and makes life difficult for the digital savvy soldiers to get feedbacks for the multi-media content they sent for analysis.
39	Diagnosis, post tests for all field ready systems for possible issues with other systems, IoT, Security systems and hacker proof base	We offer safety standards, security standards, policy based configurations and protection for all the electronic units. We use various types of test to hack the systems, check for data leaks and data theft during degraded performance or

		compromised situations
40	For sustainability of operations, engage quantum resource pools, local, distributed, partners, etc that allow offloading, state transfer via spin chains or photons	Spin chains offer a short range state transfer while optical communications using photon entanglement or laser modes all allow for a better coherent data transfers with minimum interfaces.

National Resource pools like university lab units, industrial units and research facilities all assets can be roped into the network of computational and communicational needs.

We offer better technologies that will allow clients , staff and logistics to be made uniform and meet the network demands using various reserve pools that can be on boarded into the network |
| 41 | Protocols, interfaces to transfer, handover like the signal transfer in a 4G NW. | We offer newer protocols, interfaces, abstractions, and various embedded chips that allow lots of design patterns to emerge that allow better communications among various disparate units for data, voice and multimedia communications

We reuse earlier classical techniques like signal handover that ensures plenty of units can be tapped in to divert calls that are secure and make room for better communication. |
| 42 | Atomic clock based signal timings, phase and amplitude detection inline to DSP and antenna waves as in radio NW | Atomic clocks like cesium clock, electron jump atomic times , etc all allow for better measurement and management of time with same atomic clocks being used at all places with same material that allow for accurate measurement, synchronization and clocking.

These allow better timing, coordination and management of missile countering. |
| 43 | Wireless and wired overlay NW that offer better speeds, BW, better encoding, post quantum cryptography. Use of quantum and classical signal converter, booster, non destructive boost and signal repeater. | We leverage on the Lagrangian and the Hamiltonian mechanics apart from the Newtonian that allows us to work with various emerging technologies like quantum field theory, and quantum chromo dynamics.

Quantum networks with various topologies to suit the needs of the battle field theaters like army, navy and air force. We offer dynamic disaggregated network elements that follow composable architecture to be able to be aggregated and disaggregated without loss of any physical elements. Logical separation by use of virtualization allows, system operators |

		to be able to reconfigure, and relaunch various command centers with minimum maintenances and downtimes.
44	Fabrication blueprints for various units that can be developed using available silicon production room	Modern printed ready to use systems, devices and equipments make the ecosystem faster, agile and easier to produce items. 3D printing, epitaxial growth, availability of various grades and quality of nanowires, cryogenic systems, room temperature devices etc all make the possibility of having the ready to use blue prints aprior, allowing faster delivery to the supply chain.
45	Intelligent robots, autonomous units that get real time feedback from quantum computing to make moves and get back in strategic modes	Battle field Co-bots or industrial production robots all need speed and accuracy to be useful. We make them precise with our mathematical models, quantum and AI/ML algorithms, agent societies, swarm intelligence, genetic algorithms and nature inspired response or target identifications. We use inference engines that operate to allow human interactions to be effective and serve the purpose to take commands, control, and delivery and impress the clients.
46	Quantum computing for perishable logistics management like ready to eat foods, warehouse inventory swaps, centralized canteen bookings, deliveries, and first in first out based on expiry date	Our services cater to not the field level support however we work at the various supply chain points like the back office and mid office, called as downstream or upstream support. As food supply is a mandatory need for the survival of filed level soldiers and commanders, we offer various services like JIT 3D printed food items at strategic locations near the field, food menu guide for available on ground items like grass, leaves, or wild fruits. We offer food grade recommenders; analyzers, end product contents, and a decision to go/no go to eat with some know risk. We also offer optimization of food items where there is excess supply that can be moved to a nearby empty canteen where there is a need. We apply various optimizations based on the food life, supply-demand and the risk involved in routing the items to a battle field.
47	Medical, medicines used in emergency, to reach in time and volume management allowing faster treatments.	Similar to food supply, medicines, instruments, surgery kits, emergency operation kits, organ transplants, bone fracture scanning mini-machines, syringes, antibiotics, required 3D printed bandages, clean gauges, and any artificial items that

		might be needed for transporting the wounded soldiers.
		We offer solutions that analyze the needs of the field, the staff, and generate an optimum supply chain that solves the NP type graph optimizations in supplying the items quickly, safely and without much risk during transit. It might include travel using air, water or land or a combination of these in reaching the target.
48	Specific solutions to various needs of the army, navy and air force.	Based on the needs of the different wings of the defense sectors, their theaters, their interdepartmental needs, cross-sectorial needs and the urgency all of these are virtualized, normalized under a façade and given proper logical group, routing and priority.
		We offer niche solutions to niche needs of the various operational staff, administration staff, logistics staff, and the team of doctors, specialists and external consultants. What is needed is the citizen status, numbers, licenses or something that allows them to be identified as not being a threat, will be on boarded in a phased manner and based on the events, they can be promoted. AI surveillance on all the activities is monitored that ensures no insider trading, theft or data leaks occur.
49	Quantum sensors for poisonous gases, land mines, anomaly detection, airborne diseases delivered by enemy, and quick resolution using quantum computing and countering using air force sprays with antidotes.	We have various counter attack mechanism for the newer non-traditional types of warfare games. Based on the recent history of types of attacks, like use of grasshoppers or secretly spreading of viruses via various undetectable technologies.
		We offer various counter measures like use of drones with specific kill mechanism to be spread in swarms to counter the natural or artificial grasshoppers that can damage crops within few hours. We offer quick analysis of the spread of the threat using quantum sensors and other sensitive instruments that will prepare for the type and volume of the counter ensuing timely action in preventing large damages.
		Also various types of robots in hazardous areas, nuclear fallout areas are handled by the robots that are designed to accomplish certain missions and achieve certain goals
50	DNA fingerprinting, age, time of the incidents proof collection using sensitive quantum devices for legal purposes	We offer biometric, finger prints, carbon dating , cesium clocks, quantum sensors, and subject matter expert systems for various streams of STEM, medicine, toxicology, cyber metrics , biological decay, etc all being sampled, analyzed and reported based on the standard federal , military needs.

51	Automated unattended ordering in case of no humans to take calls.	We offer full automated programs that will not need any human intervention to handle such no-human in the loop situations.
		Such cases are possible, in case of large loss to human lives in cased of bio-chemical attacks making survival of biological entities impossible.
		We offer individual automated systems like vending machines, auto alerter systems, auto reporting systems, auto responder systems, auto missile launchers, auto piloting of the drone systems or swarm of systems.
52	Quantum relays with repeaters in space and various dimensions to ensure proper in-time warning to the ground crew and various units.	We offer plan and strategies for space programs and communications that can be safe for certain types of long distance quantum communications.
		Space based units, coordination systems, satellite relays, short, medium and long range communication using lasers, maser to support data forwarding to various points on globe that have a trusted platform for exchange.
53	Deep sea quantum sensors and mini probes that are not detected easily that do not relay any data, can be picked and dropped to get time-periodicity data, decodable by self only.	We offer strategies for underwater surveillance using quantum sensors, trajectory management using quantum sensors, autonomous dispatchers, and various quantum aids that work well.
		We offer sensors for early warning, mini threats, stationary object threats, biological weapons, attack using animals, explosive devices, and various threats of approaching threats.
54	Quantum-AI Soldier-dress enhanced by exoskeleton with various low energy gadgets	We offer a range of quantum AI and hybrid systems for the soldier dress material, with various in suite gadgets, personal health gadgets, emergency supplies, self powered systems, body energy harvesters to charge batteries, prepare min meals, safe water etc meant for one time use.
		We offer 3D printer that can be used to print required frames, exoskeletons and supports from use of local mud, tree branches, leaves etc that can be handy in emergency.
55	Big Data + Quantum AI	Big Data + Quantum AI = Hi speed Intelligence management with precise and smart decisions, in time and with right

		supplies. We offer various services and products that leverage on these and can help quick decision making using a SIMPLE Mobile APP or from a control room, Our products offer highly reliable, not so complex and absolute functioning features that can be trusted to work even in degraded modes
		Highly required technologies to deter enemy tactics and maneuvers especially when there is a large risk and threat to critical assets, businesses and operations that are the backbones of economy, safety of Govt. , safety of residents and continuity of supply to meet any eventuality like in case of a war, that needs good and unbiased judgments and support to meet the needs of the frontline soldiers, equipments, and commands, allowing a path to defend the country and strategies that will nullify the superior technologies as posed by enemies
56	Quantum engineering + AI technologies	Hi grade systems, hi reliability and hi precision equipments that meets the needs of defense that can be trusted and assured by fellows, institutes, and certificates.
		We have various design and architecture models that can be leveraged using standalone or cloud platforms that help in countering hi-speed missile launches that reach any point on earth within 30 minutes. Our platform offers decoding enemy intentions, next move, target based on projections, and various low speed missile group that can counter hi-speed inbound missile. Various ensembles, group robotics, virtual screen of drones etc can help the missile to blow out in mid air
57	Countering large scale attacks	Plan to counter the large scale physical attacks, like missile attack, border attacks, distraction to allow terror groups to enter and complete their missions.
		How to overcome the might of enemy like Cyber attacks, DDoS attacks, quantum cryptography to break ciphers, use of large supercomputer to break into national systems, manipulate commands and destroy systems.
		Converting local check posts, police stations, other offices into command and control center that allow isolation of the terrorist, and countering their hostage dramas, even before they take people as hostages.
		We offer services that allow use of superior technologies that can lower the risks of large scale brute force attacks like physical, cyber or remote based. We offer services that allow early detection of approach, least attack surface exposure,

		plans to mitigate post attacks and various plans and strategies
		We offer design of systems, and devices, to meet threats and block various attacks including cyber, virtual, physical, remote, proxy attacks, social engineering attacks, chaos based attacks, attacks based on time schedule, sensitive topics etc
58	Minimal wastage and effective use	How to protect with limited resources and trained staff
		We offer solutions that preserve and have less risks allowing availability of various assets and inventory. We also offer plans and strategies using Quantum AI that allow various alternatives in meeting the supply needs in terms of time, material, price, assets and features.
59	Community and local data centers/ small command and control units	We offer various infrastructure planning, design and setup of small and effective server farms that can be made mobile and can be hosted in homes.
		Community based terror handling systems, equipments and intelligence to counter local attacks, avoiding hostage drama, large number of group approaches, how to inform officers, get ready to bring down the groups. Police to be equipped with AI vision to classify and scope down to target terror groups. Strategies to deter incoming surprise attacks physically when unarmed
		Setup of pods, clusters, mini racks, full racks, interfaces for external devices, instrumentation, serial, parallel address, data, control lines, swap boards for continuity operations, mini data center racks, on premise and cloud hosting as per business functions, operations and SLA needs. Features to offload various workloads, load balancers, VPC, virtualization stacks, supercomputer and quantum computer workloads, classical integration with legacy systems.
60	Layman's gear to counter attacks	Equip common man to handle incoming terror, equip community centers to handle incoming missiles, equip navy to handle incoming ships at least 300 nautical miles. How to early identify, and counterattack the terrorist. Related products, services design solutions. Hi tech may not help in guerrilla war, being able to identify, isolate and attack is needed
		As a Layman, allow various types of gadgets and personal gears that connect to various units, self-camera, AI and QC

		units that assist the layman to make best use of the guns and weapons to counter the terrorist and off-board the hostage taking plans. This helps many people to counter a small group of highly weaponized terrorists Offline, online based services to engage and counterattack. Simple devices that can be mass produced, 3D printed within 1 hour. How to counter cheap and dirty terror activities that are made to kill people. How to keep these groups down. How a common man can handle these incidents. All points covered in our plans and services Equipping layman with body armors, guns, intelligent devices that can detect threats, offer voice commands, visual based terror recognition and offering what to do avoid the situation. Basically a pre-trained foundation model with Chabot will help and assist the user to counter terror
61	Border patrol, early detection warning and alerting	Setup quantum sensors that can early detect approaching missiles in the vicinity of air, space, water or land mass. Use AI to classify false and true intentions. We have various plans for countering attacks and to use suitable devices and weapons that can help reduce public damage and that targets real terrorists We have plans to produce additional devices in span of a day that can be then shipped to the workers by drone. We have strategy for Drone based surveillance that can help in detecting abnormal activities and hostage drama, border crossing, detect weapons and other illegal devices from remote AI camera Prolonged attacks are common as these are sponsored by large nations and multi-nation support that allow the terrorist to infiltrate in mass by damaging surveillance units and doing maximum damage within 10 kms of border. So have a very highly sensitive and hi accurate and hi density hybrid surveillance for the last 10-20 kms range from border or LAC Plans and design to upgrade border posts with capacity that can counter all types of attacks, mainly from terrorist and also state-sponsored full scale war.
62	Mass public awareness to counter infiltrated terror teams and how to care the wounded	For already infiltrated terrorists, educate people how to isolate them and inform about their presence and how not to be taken as hostage

		Educate people on how to give first aid and stop affected patient's blood flow and body damages using medical kits and injections. Allow them to do some minor nursing skills like use of injections, bandages, revival methods, life support techniques etc Every person need to know how to act in case of emergencies and casualties Every person should know how to early identify and counter terrorists. A mobile APP can help
63	Engineering makeshifts, safety measures , proactive measures	We offer plans and design solutions for various situations: Emergency power devices, communication unit setup and basic safety kits. Devices that work from a bunker and can receive signals from the local and military channels using trust platform In coordination with Disaster Management and Civil Engineers showcase how safety units can be constructed like bunkers using existing deep holes, trenches, or areas that might help. How food, water and medicines can be ordered from these bunkers. Have safe zones for people to gather at the community center as public safety to encounter and attack ongoing external invasions Details of various emergency numbers, blood banks, hospitals, nuclear radioactive treatments, bio-chemical hazards treatments, all may be put in an APP or DB that can be easily available Have various types of sign boards, sirens and pictures that can help communicate with police in a sign language without external invaders knowing the meaning Extending the emergency phone number centers with repair and self-help kiosks, virtual call centers that can assist residents in case of issues that usually need help from popular phones like 101, 112, 911 etc
64	Emergency backup datacenters, control rooms	Use of spare data centers and office servers in case of emergencies to divert regional internet traffic to these that can be used as PROXY servers and can handle local save our souls and 911 type of voice or data endpoints. Identify and see that these centers can be used as secondary standby units that will allow local community based servers to interface and divert traffic from these fail-over servers.

		Use of cloud technologies to interface with mobile APPS that many users can use to raise concerns, threats and receive help. One or Two Apps might act as Primary and others may help these A National Grid or local + communication internet for all types of calls and emergency situation need to be in place and various responsible ministers need to have access to the control rooms, where situations, damages and control measures can be assessed
65	Screening of suspicious communication , false flags, false information dissemination, unrecognized voices etc	Screening of suspicious communications, voice, data, internet, social, satellite, spurious signals, jamming signals, illegal mobile operations, noise signals, tampered audio, man-in-the middle attacks Screening inbound international for threats, and various scenarios that can be tapped , recorded for legal purposes Screening of environments with quantum sensors for biological, chemicals that can pose threat to life and these need to be monitored and alerted for situations and incidents
66	Training content based on products, usage, functions, limits, self-help, repair, serving agents, etc	Related training manuals, for soldiers , Para-medics, various military staff and various support units , allowing integrated and single goal based order

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