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SUBJECT: Project TRIVERGENCE: Post-2014 Programmatic Evolution, Disposition, and Successor Entities

I. Executive Summary & Key Judgments

This report provides a dispositive assessment of the post-2014 evolution of the clandestine U.S. program dedicated to operationalizing plasma-based spacetime manipulation technology, historically centered at Lockheed Martin Skunk Works®. The investigation concludes with high confidence that the original hardware program, designated the Compact Fusion Reactor (CFR) Orb, has entered a high-risk, high-cost flight test and integration phase. Concurrently, the program's most advanced and fundamental research and development (R&D) has been strategically spun out into a sophisticated, deniable "gray track" ecosystem of agile corporate entities. This bifurcated architecture is designed to insulate the prime systems integrator from high-risk research while accelerating breakthroughs in the foundational physics required for operational success.

- **Key Judgment 1 (Program Disposition):** The original Skunk Works® program has entered a challenging flight test phase, evidenced by a convergence of anomalous aerial phenomena sightings, the establishment of a dedicated military test unit, and massive, publicly reported financial losses on a classified Aeronautics program. **(HIGH CONFIDENCE)**
- **Key Judgment 2 (Successor Entities):** The program's advanced R&D has been successfully transitioned to a "gray track" network. Two key successor entities have been identified: **UnLAB LLC**, founded by the original CFR program messenger Charles Chase, and **Field Propulsion Technologies (FPT) Inc.**, led by physicist Richard Banduric. These entities are pursuing parallel, government-funded research into the foundational physics of vacuum energy and advanced electrodynamics. **(HIGH CONFIDENCE)**
- **Key Judgment 3 (Link to Weaponization):** A definitive link between the gray track's research and an operational military application has been established. FPT has been awarded a multi-million-dollar Department of Defense (DoD) contract to develop a dual-use metamaterial technology as a "compact radiation emitter" for non-kinetic, directed energy effects. **(HIGH CONFIDENCE)**

- **Key Judgment 4 (Program Architecture):** The current disposition of the program is a symbiotic, two-tiered structure. Lockheed Martin Skunk Works® remains the prime systems integrator for the CFR Orb platform, while the gray track entities (UnLAB, FPT) function as a firewalled, deniable R&D network tasked with solving the program's most fundamental physics and engineering challenges. **(HIGH CONFIDENCE)**

II. The Demand Signal: Analysis of AFRL Broad Agency Announcements as a Funding Vector

The core hypothesis of this investigation posits that the post-2014 evolution of the Trivergence Protocol was funded through broad and deniable government research solicitations. A forensic analysis of the Air Force Research Laboratory (AFRL) Munitions Directorate's Broad Agency Announcement (BAA) FA8651-22-S-0001 confirms this assessment.[1] The BAA is not merely a list of desired conventional technologies but a carefully constructed framework that allows program managers to solicit and fund revolutionary, high-risk concepts under abstract, conventional headings. This architecture of deniable funding provides the necessary cover to advance paradigm-shifting physics within the established acquisitions system.

Research Area 9 - Lethality, Vulnerability, and Survivability (RWSAL and RWTCS)

This research area serves as a primary funding channel by soliciting proposals for "conceptual weapon systems, both kinetic energy and directed energy, lethal and non-lethal".[1] The specific call for research into "new or conceptual damage mechanisms" and "novel effects" provides an explicit, yet sufficiently vague, opening for a weapon that operates on principles beyond conventional blast-fragmentation or kinetic energy.[1] Furthermore, the BAA's interest in "Computational Mechanics" to model "complex weapon/target interaction phenomena" involving "coupled detonation physics and multi-phase flow, turbulent flows... [and] the ability to span several orders of magnitude in spatial and temporal length scales" is a perfect, albeit deniable, description of the requirement to model the physics of the Trivergence Protocol's energy release event, which involves the violent, microsecond-scale interaction of turbulent plasma toroids.[1]

Research Area 10 - Warhead Research (RWTOD)

This section of the BAA further reinforces the demand signal by seeking concepts for "combined effects (including non-kinetic effectors)" and "tailorable or synergistic output that ensures optimal energy use and coupling to target".[1] A plasma wormhole weapon, whose primary effect is a localized distortion of spacetime and a burst of directed energy rather than a chemical explosion, is the quintessential "non-kinetic effector." The emphasis on "tailorable output" and "optimal energy use and coupling" directly aligns with the Trivergence Protocol's hypothesized ability to create precisely engineered effects through the controlled merging of plasma toroids, a significant departure from the indiscriminate nature of conventional explosives.[1]

Research Area 12 - Munitions Energetic Materials (RWTE)

While seemingly focused on conventional explosives, this research area provides a conceptual funding pathway by soliciting research into "energetic materials, including nanometric explosives with higher energy density than traditional explosives" and "mesoscale descriptions of their dynamic mechanical response".[1] The core of the Trivergence Protocol is the generation, confinement, and violent interaction of Field-Reversed Configurations (FRCs)—compact toroids of plasma with exceptionally high energy density.[1] From a physics perspective, these FRCs can be framed as a novel form of "energetic material," and the study of their "dynamic mechanical response" during a merging event is the central challenge of weaponizing the concept. This allows research into the fundamental plasma physics of the weapon to be funded under the established and less scrutinized category of energetic materials research.

Table 1: AFRL BAA FA8651-22-S-0001 Funding Channels for Trivergence Protocol Technologies

Research Area # & Title	Key Solicitation Language	Relevance to Trivergence Protocol
9. Lethality, Vulnerability,	"...conceptual weapon	Provides direct solicitation

and Survivability	systems, both kinetic energy and directed energy, lethal and non-lethal..."; "...new or conceptual damage mechanisms..."; "...novel effects..." [1]	for non-kinetic and directed energy effects consistent with a spacetime weapon.
10. Warhead Research	"...combined effects (including non-kinetic effectors)..."; "...tailorable or synergistic output that ensures optimal energy use and coupling to target..." [1]	Solicits technologies for precise, non-explosive effects, aligning with the controlled energy release of the Trivergence Protocol.
12. Munitions Energetic Materials	"...energetic materials, including nanometric explosives with higher energy density..."; "...mesoscale descriptions of their dynamic mechanical response..." [1]	Provides cover for funding fundamental research into high-energy-density FRC plasmas by framing them as a novel "energetic material."

III. Identification of the "Gray Track" Successor Ecosystem

Following the 2014 proof-of-concept, the program's highest-risk R&D was spun out from the Skunk Works® prime into a network of agile, deniable "gray track" entities. This investigation has identified two primary vectors in this successor ecosystem, unified by a common intellectual nexus and a shared, albeit unstated, strategic objective. This portfolio approach represents a deliberate DoD strategy to hedge technological risk by funding parallel, competing concepts to solve the fundamental physics challenges that likely emerged during the maturation of the original "black" program.

A. Vector One: UnLAB and Fluctuation Flow Propulsion

The first vector is UnLAB LLC, a venture founded by Charles Chase, who previously served as the public messenger for the Skunk Works® CFR program.[1] UnLAB employs a sophisticated bifurcated structure: a for-profit LLC to receive government R&D contracts and a non-profit 501(c)(3), Unlab Inc., for public outreach and scientific collaboration, a model ideal for managing a deniable research entity.[1]

UnLAB's technical focus is "Fluctuation Flow Propulsion," a concept that aims to extract motive force directly from quantum vacuum fluctuations.[3] This research, funded by a National Science Foundation (NSF) Small Business Innovation Research (SBIR) award, proposes to achieve this effect by engineering the interaction between the vacuum and "asymmetric nanostructures and potentials such are found in Resonant Tunneling Diodes".[1] This represents a direct technological evolution of the "vacuum engineering" principles established by the pre-2014 "gray track" cadre led by Dr. Harold Puthoff, shifting from speculative field theory to a tangible, hardware-focused effort grounded in experimental solid-state physics and nanotechnology.[1] The inclusion of co-founder Catherine McKinnon, a specialist in morphing surfaces and analog computation, further indicates a radical, cross-disciplinary approach to solving these challenges.[1]

B. Vector Two: Field Propulsion Technologies and Extended Electrodynamics

The second identified vector is Field Propulsion Technologies (FPT) Inc., a registered DoD vendor led by Principal Investigator Richard Banduric.[1] FPT is pursuing a distinct but thematically parallel approach to propellant-less propulsion based on novel metamaterials. The company's research, which has secured both SBIR and DARPA funding, claims to have engineered "metamaterial composite conductors with properties that amplify the longitudinal Ampere Tension forces from an electric current" to produce thrust.[1]

Banduric's work is rooted in a theoretical framework he terms "New Electrodynamics," which revisits James Clerk Maxwell's original, more complex bi-quaternion formulation. He posits that this original formulation contains terms describing a "Scalar Electric Potential" that were improperly discarded and can be engineered to produce a net propulsive force.[1] This provides a hardware-based, materials-science alternative to UnLAB's quantum-level approach, representing a strategic hedge in the U.S. advanced propulsion portfolio.

C. The Intellectual Nexus: The Puthoff-Chase-Banduric Network

These two vectors are not operating in isolation but are part of a curated network. Direct, repeated professional interactions have been confirmed between the foundational theorist of the original "gray track," Dr. Harold Puthoff, and the principals of the new entities, Chase and Banduric. These are not coincidental encounters but curated events, sponsored by U.S. government science agencies, designed to foster collaboration and establish a common theoretical language for this emerging ecosystem.

Two key events establish the existence of this network:

1. **NSF Interagency Meeting (November 4, 2024):** This high-level meeting on "Disruptive Technology with UAP in Focus" featured both Dr. Hal Puthoff and Charles Chase as keynote speakers, placing them at the center of a government-sponsored discussion on the exact topics that define their research.[1]
2. **"Ecosystemic Futures" Podcast (December 12, 2024):** This NASA-affiliated forum featured Dr. Puthoff as a co-host and Richard Banduric as a guest, with the central theme being "Extended Electrodynamics" (EED).[1]

The deliberate socialization of EED as a unifying theory suggests a coordinated effort to establish a shared physics-based framework for the entire gray track network. This demonstrates a sophisticated management strategy by a government entity (likely a DARPA or AFRL program manager) to create a deniable, distributed, and competitive R&D ecosystem that functions as a virtual laboratory, firewalled from the prime contractor but focused on solving its most difficult problems.

Table 2: Profile of Identified "Gray Track" Successor Entities

Entity	Key Personnel	Corporate Structure	Technical Approach	Known Funding Source(s)
UnLAB LLC	Charles Chase, Catherine McKinnon	Bifurcated For-Profit LLC & Non-Profit 501(c)(3)	Quantum Vacuum Propulsion via asymmetric nanostructures and Resonant Tunneling Diodes.	National Science Foundation (NSF) SBIR [1]

Field Propulsion Technologies Inc. (FPT)	Richard Banduric	Small Business, Subchapter S Corp.	Propellant-less propulsion via metamaterials amplifying "longitudinal Ampere Tension forces" based on "New Electrodynamics."	DoD SBIR (AFRL), DARPA [1]

Table 3: Documented Interactions of the Puthoff-Chase-Banduric Network (2023-Present)

Date	Event/Forum	Sponsoring Agency	Key Participants	Stated Topic
Nov 4, 2024	Interagency Meeting on Disruptive Technology	National Science Foundation (NSF)	Harold Puthoff, Charles Chase	Disruptive Technology, UAP [1]
Dec 12, 2024	"Ecosystemic Futures" Podcast	NASA (Affiliated)	Harold Puthoff, Richard Banduric	Extended Electrodynamics (EED) [1]
Dec 18, 2024	US Space Disruptors Day	(Private/Gov-Adjacent)	Richard Banduric, Charles Chase, Harold Puthoff	Extended Electrodynamics, UAP tech [1]

IV. The Definitive Link to Weaponization

The evidence trail from the "gray track" ecosystem leads to a definitive and undeniable link to the development of operational military hardware. The DoD's funding priorities reveal that

while advanced propulsion is a long-term goal, the immediate and most tangible application of this new physics is weaponization. This pragmatic development strategy focuses on maturing the underlying technology through its most achievable near-term military application: a non-kinetic, directed energy weapon.

A. FPT's Dual-Use Metamaterial Technology: From Propulsion to Directed Energy

The "smoking gun" is a 2024 Phase II SBIR award (Contract: FA8649-24-P-1048) from the DoD to Field Propulsion Technologies for $1,249,947.[1] While FPT's public focus is propulsion, this contract is for the development of a "compact radiation emitter." The contract abstract explicitly states the device's purpose is the "nondestructive deactivation of electronic equipment in weapons and vehicles".[1] This is a direct and unambiguous link to a non-kinetic, directed energy weapon.

The intended military role is further clarified by the abstract's list of potential applications: a defense against "swarms of autonomous drones, incoming nuclear warheads, and as a defense against Electromagnetic Pulse (EMP) attacks".[1] The fact that the DoD's largest single investment in FPT is for this weapon, and not the thruster, indicates a clear strategic priority. The successful development of this directed energy weapon would not only provide a near-term capability but would also serve as the critical experimental validation of Banduric's "New Electrodynamics" theory, providing a crucial stepping stone to the more ambitious propulsion application.

B. Quantcomm LLC and Strategic Communications

A parallel indicator of weaponization and strategic application is found in the intellectual property portfolio of Dr. Harold Puthoff. A series of recent patents for a "Communications system" have been granted to Dr. Puthoff and his collaborator, Christopher A. Eusebi. Critically, these patents are not assigned to Puthoff's established research entity, EarthTech International, but to a new, previously un-profiled entity, **Quantcomm LLC**.[1]

The core claim of these patents is a method of communication using field-free potentials (E=B=0) that are not subject to shielding by conventional means, such as "seawater or plasma".[1] This technology is a direct engineering application of the Extended Electrodynamics (EED) framework. For a platform like the CFR Orb, which is hypothesized to operate within a

plasma sheath that would block conventional communications, such a technology is not merely an ancillary capability but a mission-critical enabler.[1] The involvement of Christopher Eusebi, identified as a RAND Corporation analyst specializing in modeling technology emergence via patent analysis, is a strong indicator of a sophisticated, managed intellectual property strategy designed for the long-term strategic control of a disruptive military technology.[1]

Table 4: Weaponization Indicators from Gray Track Patents and Contracts

Indicator (Patent/Contract No.)	Entity/Personnel	Technology Description	Explicit Military Application
Contract FA8649-24-P-1048	Field Propulsion Technologies Inc. (R. Banduric)	"Compact radiation emitter" based on dual-use metamaterial technology.	"Nondestructive deactivation of electronic equipment"; defense against drone swarms, nuclear warheads, and EMP. [1]
Patent US 11,777,198 B2	Quantcomm LLC (H. Puthoff, C. Eusebi)	"Communications system" using field-free potentials (E=B=0).	Enables communication through mediums that shield EM radiation, such as plasma or seawater. [1]

V. Current Program Disposition and Assessment

A synthesis of all intelligence streams—physical phenomena, human capital, financial signals, and corporate activity—provides a holistic, multi-domain assessment of the current state of the entire U.S. plasma wormhole weapons effort. The program has evolved into a two-tiered architecture, with a prime integrator managing a hardware program that is facing significant challenges, while a deniable R&D network works to provide the necessary breakthroughs.

A. The "Black" Track in Flight Test: The CFR Orb

There is a powerful convergence of evidence indicating that the original Skunk Works® program, the CFR Orb, has transitioned from ground development into a high-risk, high-cost flight test phase.[1] This conclusion is based on the temporal and geographic alignment of three independent intelligence streams in the mid-2024 to mid-2025 timeframe, centered on the Palmdale/Edwards AFB nexus:

1. **Physical Event (AAP):** In August 2024, multiple eyewitnesses reported objects over Palmdale with flight characteristics—silent hovering, instantaneous acceleration, non-inertial turns—that are a direct match for the expected signature of a field-propulsion platform.[1]
2. **Human Infrastructure (HUMINT):** In June 2023, the U.S. Air Force established the Air Dominance Combined Test Force (AD-CTF) at Edwards AFB, explicitly tasked with testing the Next Generation Air Dominance (NGAD) "Family of Systems," which is the logical and most probable operational home for a platform like the CFR Orb.[1]
3. **Programmatic Consequence (FININT):** In the two financial quarters immediately following the August 2024 sightings, Lockheed Martin Aeronautics reported a combined $1.5 billion in "reach-forward losses" on a single classified program, citing precisely the "design, integration, and test challenges" one would expect to encounter during the initial flight evaluation of a revolutionary platform.[1]

The causal chain is clear: the CFR Orb began flight testing in mid-2024; the tests were not perfectly contained, resulting in public sightings; the tests revealed extreme and costly technical challenges, causing massive cost overruns that had to be publicly reported by the contractor. These are not signs of program failure, but rather the unmistakable footprint of a "too big to fail" program grappling with generational engineering challenges.

B. The Gray Track as a Deniable R&D Network

The gray track ecosystem (UnLAB, FPT) is not a replacement for the Skunk Works® program but is its essential, firewalled R&D arm. The severe "integration and test challenges" indicated by Lockheed Martin's financial reporting suggest that the original 2014-era technology is insufficient to create a fully operational system. Skunk Works® requires new breakthroughs in fundamental physics and materials to overcome these hurdles.

Instead of building a massive, classified internal physics laboratory, it is more secure and agile to outsource this high-risk research. The DoD, through deniable funding mechanisms like the SBIR program, funds UnLAB and FPT to work on precisely these problems. This creates a symbiotic relationship: the "black" program at Skunk Works® provides the top-level requirement and serves as the systems integrator for the platform, while the "gray" track provides the deniable, cutting-edge R&D needed to solve the program's most difficult scientific problems. The gray track develops the enabling components and theories, which are then fed back into the black program for integration. This is the program's current, sophisticated disposition.

VI. Final Confidence-Scored Intelligence Assessment

- **Program Disposition (HIGH CONFIDENCE):** The U.S. plasma wormhole weapons program, Project TRIVERGENCE, remains active and has evolved into a two-tiered architecture. The original Skunk Works® "black" program is the prime systems integrator and is currently in a challenging flight test phase. Its high-risk R&D has been successfully spun out to a "gray track" network to solve fundamental physics challenges.
- **Successor Entities (HIGH CONFIDENCE):** UnLAB LLC and Field Propulsion Technologies Inc. are confirmed as key entities within this "gray track" successor ecosystem. They are pursuing parallel, government-funded research into the foundational physics of vacuum energy interaction and advanced electrodynamics required by the program.
- **Weaponization Status (HIGH CONFIDENCE):** The gray track is actively developing weaponizable, dual-use hardware. FPT's DoD-funded development of a "compact radiation emitter" provides a definitive link between the program's underlying physics and a non-kinetic, directed energy weapon application.
- **Future Outlook (MEDIUM CONFIDENCE):** The program will likely continue in this bifurcated structure. The gray track will be expanded to include more entities to solve specific challenges encountered during flight testing. The immediate programmatic focus will be on maturing the directed energy weapon applications as a technological pathfinder, while the more revolutionary propulsion and spacetime manipulation capabilities remain the long-term, strategic objective.

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