



**TETRAD Institute of Complex System Dynamics
presents**

**Your Personal Invitation
to**

New Horizons Beyond 2020 Vision

**A Program Constructed to Provide a Suite of Cooperative Solutions
for Emerging Critical Threats to Human Civilization**

**Included within this Document:
Public Statement on Accomplishments, Results, and Next Steps
+
Action Plan for Your Engagement, Support and Participation**

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Preface

TETRAD Institute of Complex System Dynamics, along with several partners acting within a global consortium, has designed and implemented a Special Program for which we invite You as a significant and important team member.

New Horizons: Beyond 2020 Vision, in the form of precisely integrated scientific and social projects, is currently delivering cooperative, cohesive and resilient Solutions for a number of challenging issues that are creating severe threats to the stability and continuity of organized human life on planet Earth. Some of the Solutions underway are very direct and some are indirect, and all are carefully designed to fit with needs within our society and the broader socioeconomic ecosystem of our world.

This Program is necessary, urgently needed, and the timing is aligned with the events of today and those we can expect in coming years and decades. Indeed, we are behind schedule, in the opinion of most of us presently involved in the consortium of experts, mentors and participants of all types within the New Horizons Program. Our world, our civilization, is moving past a critical set of junctions and is now on a very dangerous and indeed precipitous path.

The recent and current COVID pandemic, as traumatic as it has been, is frankly “light” compared to what may be ahead for us. COVID-19 is both a precursor and a warning for situations that potentially may be far worse for people as individuals, families, communities and societies. *New Horizons – going Beyond 2020 and Beyond 20:20 Vision, Thinking and (in)Action* – is where You and We can work effectively together in order to not only mitigate and reduce the “negatives” but enhance, vitalize and cultivate profitably the “positives” - for the Greater Good of the Whole without inordinate sacrifices by any of the Few.

Introduction

Within these pages you will find sufficient descriptions of everything involved and everything we want You to do as active supportive participants. We begin with the nature of the Crises for which *New Horizons* is a suite of Solutions, and we lead into the Action Plan for these Solutions – each of which is underway now and has been for years and even decades - for which you are being directly and openly invited to participate as an important mentor, guide, facilitator and cooperative leader.

The apocalyptic year 2020 has drawn to a close. It is now 2021. We are directly approaching specific individuals in order to engage them within *New Horizons*. You are one of these Persons. You are receiving this document because you are an individual who is significant for the *Big Picture of the Future* which we, along with many others worldwide, are addressing head-on in constructive ways. We need your direct involvement, not merely or simply some financial support but your time, energy, spirit, and enthusiasm, for implementing the next phases of *New Horizons: Beyond 2020 Vision Program*. By *direct involvement* we mean: participation in supportive ways. This is as much about personal communication, mentorship, and yes, your time, and not only financial support. Together we will discuss, discover and define, with clear and mutual consensus, how we will work Together.

We are now engaged, necessarily, in ramping-up and accelerating the Projects in *New Horizons*, because of the urgency for our world, and because we can say that these Projects have been successful in their earlier phases, in what has been accomplished thus far. We have been achieving Results in each Project, in each dimension, in each criterion – scientifically and socially.

We are initiating and already conducting the next phases of Projects which make up the *New Horizons* Program. These require and involve today and henceforth more than the “conventional and status quo” types of cooperation and project management that often take place for scientific, technical, medical projects. The stage is now set for specific, strong, sustained collaboration - international, multi-institutional, multi-cultural collaboration - on a scale of complexity and time-criticality that has rarely been demonstrated among people on Earth, and often in the past, highly focused and highly constrained only under the clouds of global war.

New Horizons is not another Manhattan Project. It is not another Apollo Moon Program. It requires more attention and engagement by persons with *your* experiences, skills, talents, and prowess within multiple spheres of civic, cultural and socioeconomic leadership. *New Horizons* is critical for Our World of Today and an Inevitable Tomorrow. It is like Manhattan Project, Bletchley Park, Apollo, Soyuz, and ISS all combined together.

New Horizons is precisely where and how we – WE – can come together as leading individuals, leading minds, from multiple appropriate fields, labors, skills, and cultures – in order to do what has never been done before. Together we will integrate and bring into creative synthesis and synergy what we have learned, what we have done as professionals, for the important tasks at hand for our Civilization. We shall do it not in response to war or catastrophe, not in desperation, but in positive, logical, and mindful collaboration, in the spirit of “*coadunatio*” - the gathering and coming together of fertile and fruitful harvest in order to make good things happen for our People.

Synopsis

I want everyone receiving this (and names are listed herein) to be in a teleconference in very early January, 2021. It will be informal, comparatively short, and all focused upon Action.

Some of us will continue to talk and exchange written/audio/video communications before this teleconference – such will mature further, from your reading of this document and your direct responses. Out of this teleconference, which may be brief compared to many with which we are all too-accustomed, we will finalize a consensus-driven (by all of us including you) Action Plan. I and a few others will travel to wherever and whenever we need to be, for going into the Next Defined Steps coming out from our meetings and resolutions. There is no time to spare, and I am 100% committed to everything in New Horizons.

We are certainly not the typical STEM group. We have a leaner, faster, and aggressive agenda for *Production of Real*. As institutions and individuals, we are producing results that with your help will benefit all of us including your preferred interests. We are producing more than the usual stacks of academic papers (of course we have done so and can do more of that, in due course) or a stack of flashy PowerPoints. What you see in the *New Horizons* Projects are and will be practical tangible Results for You to have and use, and for Our World. This includes profitability down the road but very concretely and definitely, since economics is important in any scientific, social and multinational undertakings.

There will be decisions to be made among certain institutions, agencies, companies. Those actions include and involve governing bodies of universities, corporations, and governments, both national-level and regional-level. You are among those decision-makers and their eminent mentors and influencers.

None of this “immediate next-phase” activity requires elaborate procedures such as meetings of parliaments, boards, and such. Whatever needs to be done can be done in a very straightforward way at this point, by a team of intelligent individuals who are capable of collaboration – You and We.

Subsequent phases of certain of the New Horizons Projects will, later in 2021 and thereafter, involve more steps, more people, appropriate structures of management and control. However, the entire nature of *New Horizons* and what we at *TETRAD Institute* are doing as coordinators and facilitators is precisely about *Action First, Fast and Functional, for Critical Necessary Tasks*, without the stifling, asphyxiating pillows and blankets that lead to “death by bureaucratization”. In this case, we are talking not about “some abstract program” but, potentially, death for millions and even billions and the end of any civilization as we have ever known it on Earth.

We are not exaggerating at all. We are at a very critical point in our life on this planet Earth.

Some key points which will be explained in more detail within subsequent sections of this document and thereafter as we communicate together, and I summarize them here:

New Horizons and all its Projects, all its Actions underway, serve *everyone's interests and advantages*. Everyone will gain something, both in future profits, sure, but also on other ways. You may come to see New Horizons as your “crowning achievement and legacy”. I certain do so.

Yes, we do need your support that includes financial support, but even more so at this point, we need your influence – *your personal influence in the circles in which you move and over which you are in various control and mastery*.

The main outcomes from our early-2021 meetings, conversations and decisions will be a true, real, good, humanitarian, scientific program that is summarized in that document on the front page of www.tdyn.org about "Advance RFP Projects -- New Horizons: Beyond 2020 Vision". The key points are provided here, below, along with Accomplishments.

A key part of this is **ASTRIC** - asteroid collision prevention in the immediate and near-term visible profile, but also providing concrete and practical value for asteroid mining, space construction, assembly, manufacturing, and - for things right here on Earth right now.

Another key component is **VESID** - a safe, publicly-acceptable medicine (not a vaccine) to reduce infections and contagion of Covid-19 and other viruses. This is quite mature now and ready to go into experimental phases and then clinical trials.

Another is the core physics of **RTD** which opens the doors for significantly superior Energy and Power for Earth and Space. This directly ties in with two forms of energy and power generation and use on Earth and in Space, including eco-practical fusion (**Teranod** and **Cygnus**).

Another is **IntelAgros** which is remarkably simple and practical for smart farming and climate-change-sensitive agriculture and environmental monitoring and management.

Another is **OASIS** because we need this kind of better and intelligent, personal, non-intrusive, positive, supportive social media and ASAP.

Another is **Mirnova** because only with focused and cohesive STEM and STEAM education and training like this can we achieve what we need Today for our adaptive Future.

Another is **NeoPlexus**, the Generalized Heterogeneous Computing Machine, a different type of quantum computer based upon biology and the brain, using the “natural quantum computing” of cells and viruses as the underlying model. This is not “contra” to many other quantum computing R&D initiatives underway, but simply Different. It solves a huge and different set of open-ended problems that Biology does better than those machines.

Another is **CHS** - Community Health and Safety Infrastructure Sustainability – this grows out of years of work pertaining to epidemiology and public health and infectious diseases

and this is also what has been sorely missing and yet readily available for COVID-19. CHS is what we developed more than a decade ago to meet the needs and counter the threats of a pandemic like COVID. We all need Your assistance to bringing this into communities, cities, states, nations. CHS very concretely can be saving lives and also economies.

Another is all the rest within what is terms “**ICMC and TBD**” - a fundamental new understanding of communication, control, and regulation within biological systems and relevant to a number of neurological, autoimmune, cancer, cardiovascular, and gastrointestinal disorders and diseases including MS, ALS, Alzheimer's, Parkinson's, PoTS, SVT, AFIB, MALS). Our work with COVID has slowed this R&D but indeed our COVID virology program (“VESID”) has deepened our understanding for these other diseases and the ways to understand their origins and to develop new approaches for treatment.

This does now and will involve persons and institutions in USA, EU, UK, Russia, Israel, UAE, CN, KR and JP. This list is, of course, not closed. There are now and will be individuals involved, and institutions as well, in other countries. Our teams and partners have been working together, in some cases, for not only years but decades. We need You to enable us to move to the next levels of collaboration and to complete the Next Critical Phases and to achieve the Next Accomplishments and Deliverables.

Yes this is super-big, super-bold, super-amazing. But it is Necessary for the safe survival and sustenance of Civilization. We will provide everything necessary to satisfy anyone's reasonable expectations or concerns about exactly how and why. This means not only with regard to the accuracy and objectivity of the science and medicine, the STEM, but also in the form of demonstrations and guarantees about every step in our methods and processes. We have and will provide objective third-party review teams of accountants and auditors, and attorneys, and persons with eminently qualified social and political understanding and objectivity. These persons, these panels, will surely satisfy any normal and realistic concerns going forward.

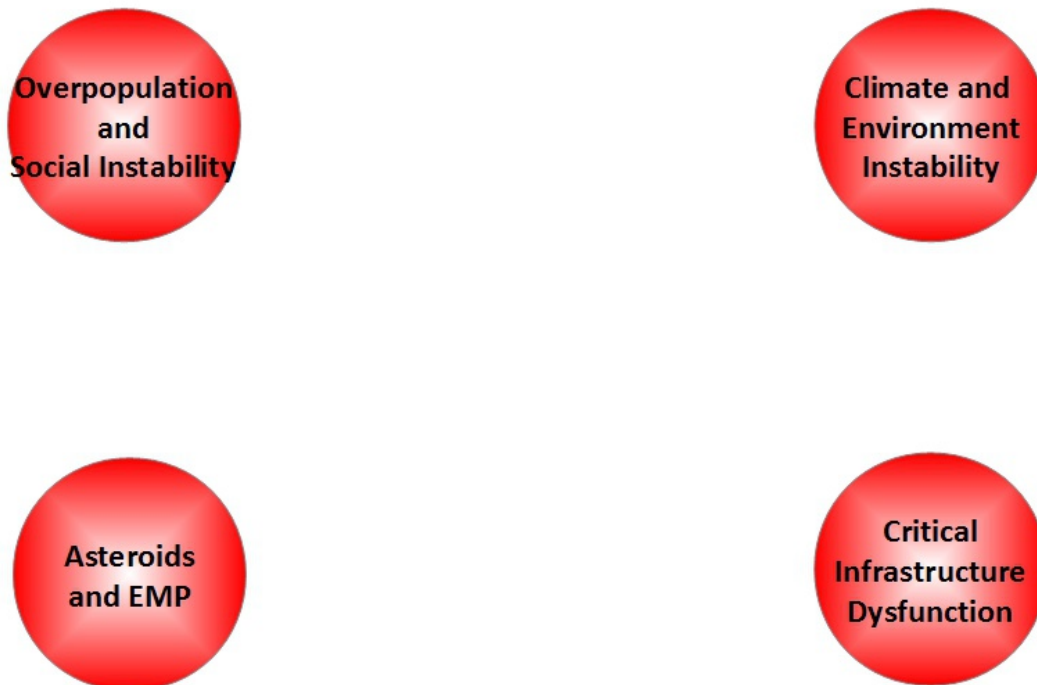
You will each have some ideas, connections with other people, and very certainly, you all are intelligent and creative. Any of you may have some ideas which, combined with others, will help move this all quickly forward in early 2021. By working Together, *New Horizons* will be better for our world than anything else and certainly better than what 2020 has been for everyone.

Collectively, You and those with you – your organizations – can look forward to getting the lion's share of the future profits – financial and in terms of fame and “celebrity value” - from what is in *New Horizons*. This is important to be mentioned and to be understood. *New Horizons* is absolutely not some “entrepreneurial business venture” of ours, not a third-party company seeking to profit off your backs, your reputations and your wealth. *New Horizons* is a Team Action and one in which there surely are and will be profitable results, and You can have, literally, the “lion's share” - my satisfaction is in Getting The Work Done and the Results into People's Hands for Our Collective Benefits.

Crises At Hand

The following diagram is truly sufficient for what needs to be said at this point in this document. We have papers and books about all this. It should be obvious to any and all. What you don't need is more data, more talk. What we all need are the Actions and Results like exactly what we and our consortium team members have been doing for the past several years and indeed for a few decades.

The Four Critical Challenges



Solutions Underway

These are the Projects that comprise New Horizons: Beyond 2020 Vision. They are neither brand-new nor start-up nor concept-only nor phase-1 only. Most originated many years ago, and certainly not only with the key people comprising TETRAD Institute, or IRI the Company. All of this grows and rests "on the shoulders of giants" - the men and women of STEM and the Arts going back more than a few generations, really.

Yes, these have been in one way or another the focus for the past several years for people affiliated within and along with TETRAD and IRI. Yes, these are not "finished" - not by any "long-shot". Yes, some have years to go.

Yes, they all will succeed and we can show you how, in details, and yes, we can overcome any objections, rants, cat-calls, and such from anyone, anywhere. Yes, these will make big profits for people like You, and many others. But most all all, THESE PROJECTS WILL HELP SAVE OUR WORLD. SAVE OUR CIVILIZATION. ADVANCE OUR CIVILIZATION THE RATIONAL WAY FORWARD.

REALLY. That includes YOU in all of *New Horizons*.

These Solutions are listed and described now in terms of:

- briefly what they constitute
- what are some of the accomplishments that have been achieved to-date
- what are the next steps going forward
- some specifics where we need your engaged assistance

Accomplishments, Current Status and Next Phases

Typically, these results would be announced through either formal publications or by means of proprietary "non-disclosure" releases and exchanges, but the State of the World leaves no place or time for such. There is no more spare time for such rituals and theatrics. The statements will be direct, straightforward, truthful and firm. They may seem incredible to some, but to those of us who have dedicated ourselves to The Work, they are rather matter-of-fact logical consequences of our investigations, experiments and trials, and in no uncertain way, clearly the types of results that were expected from the outset. These will apply in particular to ASTRIC, VESID, RTD and the latter's two application offshoots, Teranod (fusion) and Cygnus (vacuum energy condensation and extraction including low-energy particle transmutation). What we had expected to take significantly longer has indeed some early results that are sound affirmations of the correctness of theory and practice, the validity and quality of models and applications. Yes, 2020 is ending on a dramatically good and powerful note, and it points to some ery amazing and wonderful things to come - for those who have Vision capable of extending beyond the limits of merely "20:20". Professor Mar'Tan

These are the ten Projects that comprise New Horizons:

[1] ASTRIC

Astro Terrestrial Remote Interaction and Control, and specifically, *Asteroid Reconnaissance Intervention and Control*. Cooperative modular multi-function robot networks capable of conducting autonomous high-fault-tolerance missions in space or terrestrial environments. Designed for performance of tasks that specifically include modification of the positions and trajectories including orbits of large objects such as asteroids, and specifically to prevent potential collisions of such space-borne objects with Earth.

ASTRIC emphasizes control (cybernetics), cooperation among both human and AI control agents, and a multiplicity of cooperative manipulator technologies. Included is the core technology of structural components and assembly/disassembly mechanisms for ASTRIC units, known as MOSES (Modular Organic-assembly Space-based Engineering System), and HALO (High-Altitude Lift-Launch-Land Operations). HALO constitutes an architecture for space-based operations that eliminates the need for conventional heavy rockets and reduces other engineering complexity and cost factors for launching and landing payloads to and from planetary orbit. HALO employs a relocatable platform at a very high altitude, constructed of modular pod units, for use as a waypoint base for traffic of vehicles to and from Earth and to and from space-based locations.

ASTRIC employs design and technology that derives extensively from professional operations and methods in: mining, lumber, stonecutting, carpentry, masonry, sailing, and also in emergency response operations such as following earthquakes, hurricanes, tornadoes, and floods. The ASTRIC team is unique in being a space-focused and robotics-focused team that has included and presently includes individuals with such industrial and personal direct experience.

ASTRIC is intended and planned to grow and expand significantly within the next ten years. The project is now at the stage for integrating software, electronics, mechanics, and other operations into prototypes for Earth-based testing and then launch into orbit. There will be multiple steps and stages for different teams as work progresses into system implementation.

Related background information: www.astra.tdyn.org and www.astric.tdyn.org

ACCOMPLISHMENTS TO DATE

We have designed and engineered a comprehensive control system architecture and its software components. We have built prototypes on Earth using robots and including both UAV and AUV and ALV types. The variety and capability has advanced with the maturity in the relevant fields. We have emphasized compactness, multiple manipulators, low weight, and extraordinary fault-tolerance. We have demonstrated effective human-machine interface components. We have addressed packaging for earth-based launch and subsequent deployment of an array of robot devices in a space environment. We have done the first experiments that demonstrate the fundamental underlying system architecture for deployable ASTRIC units and for their control. We did this by having robot devices perform tasks in manners that are directly “mappable” to tasks to be done in near-zero-gravity

environments:

- manipulate and move both a large log and a large amorphous-topology rock, both on land and in water
- break (deliberately) a robotic accessory and have another robot replace it successfully so it could continue working

STATUS NOW

We are fully ready to proceed with the next phase which involves refinement and completion of software and hardware components for prototypes that will perform more accurate and realistic tasks, still in terrestrial environments, and in parallel to proceed in the tasks for a launchable prototype with a minimum of four cooperative robot units.

GOING FORWARD

What we need now in 2021:

Formal establishment of the team including bases of operation within selected institutions in several countries. This requires commitment agreements for affiliation and support both implicit and explicit. We are seeking to have available for 2021 – 2024 a base capital fund of \$8M for the next phase of constructing a fully operational Earth-based suite of robots that will demonstrate all the functions required for distribution in an asteroid location and establishing the network in position at the asteroid and performing a trajectory manipulation. This phase will extend through 2023 or at latest 2024, and the outcome will be a prototype that is sufficient for the testing required to then produce a fully launch-ready set of ASTRIC robot units. That subsequent phase, including actual launch and space-based trials in NEO with man-made targets in place of asteroids will be 2025-2027. The next phase will be a network that is launched by February 2029 at the latest, for convergence with the Apophis fly-by on April 13, 2029, for trajectory manipulation to prevent collision with Earth in 2036 or 2068 or thereafter.

[2] ICMC_TBD

Immuno Cyto Molecular Computation/Communication and Topological Biomolecular Dynamics
Research is focused upon two principle areas:

[a] VESID (Viral Entry Structural Integrity Disruption) – design of prophylactic and therapeutic medications for interruption and prevention of host cell entry processes via specific targeting of viral envelope topological structures. VESID is based upon topological models of cellular and viral signaling and recognition which contribute to the mechanics of infection, inflammation and immune response. VESID is not a vaccine nor a form of medicine for advanced viral infection such as in deeper lung regions with consequent inflammation and other pathologies. VESID is a combination of proven and established compounds for oral and nasal administration, and it is principally a prophylactic and early-stage defense against a virus (first target, SARS-CoV-2 from COVID-19; others to follow later).

Related background information: www.intelrenaissance.com (see “VESID”)

[b] Topological order and efficiency, conformal geometries, and biosoliton dynamics within autoimmune disorders, with special attention to multiple sclerosis and dementia progressive pathology. The medical domain of special study is that is Neuronal Electrochemical Stressors disrupting biosoliton molecular signaling and leading to accelerative demyelination and microtubule brittleness and fragmentation and the foundational stages of MS, AD and other ND disorders., and also examination of similar topological-metabolic relationships and etiologies involved with such conditions as autodynomia, PoTS and MALS.

ACCOMPLISHMENTS TO DATE

We have shown in models, in theoretical work, how VESID can function at the molecular (protein-lipid level). We have shown the projected success of a mix of compounds that are known to be safe for human consumption. Certain of these have been employed for medical purposes, and certain of these are compounds found in ordinary human diets. We have shown that these compounds will remain sufficiently long in nasal and throat passages and will make contact with incoming viruses that travel in those passages. We have shown that there will be sufficient levels of contact between these compounds and the viruses in those regions in order to effect molecular bindings with viral . Our theoretical and modeling work has provided the basis for the claim that VESID can provide a substantive and strong defense against COVID in ways that support all current and traditional methods (e.g., face masks, accurate personal hygiene, social distancing) and that, very importantly, reduce the risks of contagion that do exist even with such precautionary and preventive measures. We believe that VESID can serve, in combination with healthy practices including such precautions, to enable communities and societies to practice lighter, safer and more socioeconomically proactive measures, all of which support not only economies but the psychological and social well-being of the populations.

STATUS NOW

We are now ready to proceed to experimental verification in vitro and then in vivo. All advance preparations for clinical trials have been planned and arranged in the full expectation that the next immediate experimental phase will be successful. We have made already arrangements for the types of clinical trials to be employed, regarding population demographics and especially social (environmental) settings, since the nature of such clinical trials will involve, necessarily, people operating within social groups and different locations.

GOING FORWARD

What we need now in 2021:

Formal establishment of the team including bases of operation within selected institutions in several countries. This requires commitment agreements for affiliation and support both implicit and explicit. We are seeking to have available \$6M – a significant percentage being to ensure an adequate “reserve” for accelerating the project - for moving VESID through next and comprehensive/final experimental phases and into readiness for beginning clinical trials by July/August 2021.

[3] *Mirnova*

Educational and internship programs within the arts and sciences, including four main focus areas:

[a] *Librarium* - Content assimilation, organization and editing processes involved in the *Librarium*, a knowledge conservation project initiated @ 2010 within TETRAD Institute. The *Librarium* as a defined entity involves the preservation, conservation and sustenance of scientific, technical and humanities knowledge and skills for long-term future needs and in parallel for knowledge transfer to and among diverse communities of learners and active STEM developers.

[b] *EcoVita Oasis* – This is a project component that serves both the clinical medicine applications of ICMC-TBD (above, project #2) and the emergence of clear psychosocial needs from our global experience with COVID. This incorporates Neurophysiological Wellness Activities involving Natural Environment Experiences. This aspect of *Mirnova* activity is directly connected with youth education also, and with practical “on the ground” therapeutic derivations from the more theoretical ICMC_TBD Project. This activity furthermore also links with the IntelAgros Project (#7, below) and its social enhancement values.

[c] *Internships* - Participation for a select group of students and learners (youth and adults) in active research and development projects whereby the participants work as interns and apprentices within the context of personalized, mentored education that is deeply and directly integrated with solid, complex and long-term research and application development, as well as with other school programs (both direct-engagement and distance-based). Such participation is a key part of all the *New Horizons* Projects.

[d] *Scholarships* - Coordination and management of special merit scholarship programs for youth and adults in the arts and sciences with a focus upon physics and medicine. These scholarships are supported by a number of private and public sponsors and they are administered by *TETRAD Institute* with the collaboration of other project team members.

Related background information: www.mirnova.tdyn.org and www.librarium.tdyn.org

ACCOMPLISHMENTS TO DATE

The basic *Librarium* architecture of software and databases has been designed and constructed. We have over 8,000 volumes both physically and digitally in the *Librarium* as well as over 25,000 papers and other documents in digital form, many with comprehensive annotations, indexing, and cross-referencing, all tasks being done for the express purposes of what is the *Librarium* main function - a resource for reconstitutable, reusable, future-sustainable knowledge and applications to socially necessary and constructive tasks, including retraining and reconstruction of what may become “lost” knowledge, skills, trades, methods and techniques that could easily become irretrievable or require decades or centuries to rediscover and relearn.

STATUS NOW

We are prepared to enter the next phase which involves both digital and physical work with *Librarium* resources. This requires extensive content development and organization, and the establishment of a

sufficiently stable and permanent base of operations, including a facility for housing the physical volumes of the *Librarium* and the primary repository of all digital resources.

GOING FORWARD

What we need now in 2021:

\$750K for extending the Librarium work, including participation by a mostly-intern team on principally Librarium content.

\$750K for other Mirnova tasks where interns and apprentices are working on other New Horizons Projects, principally ASTRIC, NeoPlexus and VESID.

\$500K for providing between five and ten scholarships to students ages 11 to 18.

[4] CHS

(Community Health Sustainability)

The integration of BioProtection practices and methods, MedAtrium mobile diagnostics and therapies, Eyrie public activity and resource management informatics and VESID medicinal solutions, tailored and optimized for specific civic and social entities. MedAtrium constitutes a highly modular and reconfigurable architecture for rapid-deployment medical diagnostics and therapeutics, oriented to large-scale public needs in epidemic, pandemic and other emergency response situations. BioProt incorporates informational methodologies, physical procedures, and social education in order to address multi-origin, multi-agent problems of microbially-transmitted infectious disease and other health conditions through the environments of homes, schools, workplaces, and other sites of human congregation and interaction. Eyrie provides an open, secure, publicly-acceptable, privacy-protective informatics environment, usable by any members of the public and also any professional individuals and institutions, capable of performing the essential and necessary functions of finding, organizing and sharing information important in public health and individual health response to epidemic, pandemic and similar health and safety crisis situation.

Related background information: www.intelrenaissance.com (see all product and research components)

ACCOMPLISHMENTS TO DATE

All components and the integrated system architecture for CHS have been carried through the respective R&D stages and all components have received appropriate regulatory and licensing approvals, in most cases for a matter of years, as far back as 2008. We and our partners have built what needs to be employed today and going forward. Visit the IRI website to learn more about what we have now – Bioprot, MedAtrium, Eyrie, and all our knowledge and people-experts for building CHS for anyone. There is all that reported on the site and in related docs.

STATUS NOW

The project team has been completely ready to proceed with virtually any civic, corporate, or other public/private entity, for implementing customized solutions. The immediate challenges have been

not in technology nor service abilities but in the fact that so many communities and institutions have been in a state of confusion and lack of resources for beginning these measures such as what CHS can provide, because of the intensity of the COVID pandemic.

GOING FORWARD

What we need now in 2021:

We are fully prepared to implement and deliver a CHS solution now for any community or institution. We need a “reserve” capital fund of \$5M for the initial but recoverable (through distribution to public and private sector partners and clients) expenses involve to prepare, deliver and set up four (4) MedAtriums and the BioProt protocols and education for target communities within USA, UK, Spain and Russia.

[5] NeoPlexus

(GHCM – Generalizable Heterogenous Computing Machine)

A biologically-inspired architecture based upon quantum biological models, incorporating principles of quantum computing that derive from biological models. GHCM is focused upon pattern discovery within very large and uncertain data spaces. It is a “non-Turing machine” architecture, distinguished from qubit-based quantum computing based upon “Turing Machine” architectures which characterize virtually all computer systems both conventional and those employing “qubit” models. Technological implementation involves protein-polymer conjugate arrays constructed within a graphene-silicon substrate. GHCM solves different classes of problems. It aims, as one of its primary purposes, to enable detection and recognition of unique and similar patterns of information through a form of topological resonance at the macromolecular level. Its heterogeneity involves the ability to map such pattern state spaces into Turing Machine computation. The latter may include, for specific tasks, the employment of modules that include qubit-based quantum computer machines.

Related background information: www.neoplexus.tdyn.org

ACCOMPLISHMENTS TO DATE

We have realized theoretical advancements as in published papers through 2019 and in new as-yet unpublished work that has set the stage for moving to experiments using protein-polymer conjugates and graphene interfaces. We have a satisfactory model now for the behavior demonstrating a “smart virus” (simulation model) that can adjust itself to fit into a cell, based upon earlier studies of influenza and ebola viruses. This describes a biological quantum computer of the first-order. It is an excellent model because we are using it within VESID to accomplish the task of defeating such adaptive viruses, of which one highly successful and intelligent one is SARS-CoV-2. We have accomplished the initial phases of building a model for what is feasible to begin design work on an experimental platform.

STATUS NOW

We are at precisely the point to commence experimental work with a prototype chip design that incorporates protein polymer conjugate structures that can be studied using nanoscale imaging and

fabrication. Note that the design of GHCM provides for performing this type of quantum computing at ambient room temperatures and with a physical architecture that can be constructed for “table-top” operations, potentially at even smaller scales in the future.

GOING FORWARD

What we need now in 2021:

We are seeking \$1.5M for the next stages (2021 – 2023) of the research which commences the experimental phase and will result in a demonstrable unit.

[6] OASIS_Terra

(Open Autopoietic Social Intelligence Synthesis)

An adaptive digital environment for social communication, collaboration, education, entertainment and trading functions, including Eyrie, a subset of OASIS focused upon geospatial public activity, health and resource management informatics, and Seldon, an open-architecture engine for predictive analytics in the modeling of psychosocioeconomic dynamics (PSED).

Within the operational space of the OASIS world environment (known as “Terra”) are information trading functions known as Kerberos constituting a massively-distributed multi-logic encryption and privacy system for digital securities, offered in the relational structure of “private bank” client services.

OASIS as a social network emphasizes personalization, privacy, freedom of expression, and what is termed the “COMEET” framework – Communication, Collaboration, Meeting, Making, Entertainment, Education, and Trading. Underlying all its features is an emphasis on enabling persons and groups to have Purposive Meaningful Communication and Constructive Interaction using the internet and also more direct non-digital, non-“virtual” means.

Related background information: www.intelrenaissance.com (see “OASIS”)

ACCOMPLISHMENTS TO DATE

The whole of the core OASIS architecture is defined and a sufficient body of the requisite software has been designed and implemented. Prototypes of all components and “model content” have been engineered, tested and reviewed by trial groups.

STATUS NOW

The next step is to implement and release the beta-level version of the environment to the public. This is a straightforward set of tasks involving server operations and social media communications, as well as initial content preparation for people to have a larger repertoire of materials at their disposal.

GOING FORWARD

What we need now in 2021:

\$750K to use for final tasks of software and especially content implementation and a global release.

[7] IntelAgros

Modular networks of compact, portable units which provide agricultural and environmental monitoring, agricultural control of irrigation, fertilizers and pest abatement, and hybrid electrical power generation. The network may be small (single-units for small gardens and farms) or extensive for large agri-operations. Networks linked together via internet connectivity provide dynamic parallel distributed computing resources as well as power management and water/chemical management.

IntelAgros modules may be employed as singular units for homes and small gardens or as open-ended arrays that can scale up to the configuration of even the largest farm operations. At the lower end of the scale, these units can be employed in a variety of educational and psychological therapeutic settings. At any scale of deployment, the units can aid in sustaining multiplexed power sources including solar, wind, hydroelectric, battery, tidal and other forms.

Related background information: www.mirnova.tdyn.org

ACCOMPLISHMENTS TO DATE

Prototypes were built and put into use within test cases at selected and highly diverse farms in Morocco and Russia. An award was won by one of the teams of interns and apprentices working on the electronics and software. Test cases were performed at a major agricultural-specialization university. There has been uniform, successful acceptance and understanding and operation.

STATUS NOW

Everything has become ready for moving to large-scale implementation and distribution by “seeding” (pun intended!) throughout different agricultural communities worldwide.

GOING FORWARD

What we need now in 2021:

\$750K to use for everything to demonstrate and to be set up for larger-scale production and distribution.

[8] RTD_QR

(Reflexive Topological Dynamics)

A project in theoretical physics that addresses the integration and unification of quantum mechanics, general relativity and cosmology through rethinking of fundamental conceptual frameworks (e.g., space, time, mass, gravity, charge, spin), leading to a model that is consistent with observed and experimental data including the Standard Model and astrophysical observation and measurements. Emphasis is upon principles of emergent complexity and structure, conformal geometry, topological order, and processes of reflexive information flow between wholes and components. Within the developing RTD theoretical model there are emerging new perspectives upon the nature of gravity and phenomena of superposition and entanglement, the derivation of fundamental particle and force types, and a non-inflationary continuous-flow cosmology which addresses the phenomena of black

holes, dark matter, dark energy and parity phenomena.

Related background information: www.primus.tdyn.org

ACCOMPLISHMENTS TO DATE

being written by Monday 12/21

The core theory has been deeply worked out and is in the process of being written into papers and a book explaining the whole fundamental model, several theorems, the outlines of proofs and where past and future experiments can demonstrate validity.

STATUS NOW

Ready to proceed with focused team workshops, both online and onsite, in USA, UK, EU and Russia, with a suite of publications, and with expansion of the RTD Team.

GOING FORWARD

What we need now in 2021:

\$1M to use for this and inclusive of Teranod and Cygnus work.

[9] Teranod

Modified tokamak architecture for sustainable compact generation of electrical energy through hydrogen-based nuclear fusion. “Teranod” = Toroidal Energy Resonance Amplification Node. A central part of the architecture involves the formation and control of tunable solitonic plasma beams which are compressed within magnetic confinement in a non-classical “horn torus” structure. The soliton beams serve to reduce noise and heat loss as experienced in other system designs that consequently require extraordinary power sources and confinement architectures.

Related background information: www.primus.tdyn.org

ACCOMPLISHMENTS TO DATE

being written by Friday 12/18

Experimental work done with a nuclear reactor in 1995-1999 laid the groundwork for the claim that this can be replicated in a way that will enhance certain tokamak arcitecgture reactors. We have accomplished theoretical foundations and are ready to proceed to refined models and then new (reperat) experiments. The early experimental work was almoast an unexpected success given that we were working with the first stages of 3D soliton models and with older and suboptimal experimental equipment.

STATUS NOW

being written by Friday 12/18

GOING FORWARD

What we want for Teranod– see RTD Project, above

[10] Cygnus

Research in topics and potential physically practical architectures for photon extraction processes (topological condensation, tensegriton particle models) that offer prospects for generation of sustainable energy convertible to other forms of energy storage and transmission, with a focus upon developing practical applications for spacecraft propulsion and similar future uses.

Related background information: www.primus.tdyn.org

ACCOMPLISHMENTS TO DATE

being written by Friday 12/18

Key points – we have achieved a demonstration in theory, in our developing model, for the following:
produce and capture photons from vacuum sources without extraordinary and impossible inputs of energy

describe a process by which positrons can be produced efficiently and then applied to an energy-conversion technology to release energy as principally photons

STATUS NOW

being written by Friday 12/18

GOING FORWARD

What we want for Cygnus – see RTD Project, above

New Horizons Team

This is about YOU. You and the others here are the Individuals who can and will make New Horizons happen and help us to have, to employ, to use, to succeed with, some of the Best Solutions for some of our Most Intense Crises At Hand. This list constitutes the persons we want onboard as supporters, advocates, sponsors, mentors and champions for *New Horizons: Beyond 2020 Vision*.

[Notes – Martin's comments, including underlining for the Key Prime Targets, to be removed obviously from final document]

Roman Abramovich

Michael Bloomberg

Rachael Csencsits

Oleg Derepaska

Martin Dudziak

William Frist

Daniel Helming

Yuri Milner

Elon Musk

Vladimir Potanin

Prince Charles, Duke of Windsor

Prince William, Duke of York(?)

Marie (?) - LU Finance Minister

Mackenzie Scott (formerly Bezos)

Sheik --- (UAE)

Peter Thiel (ex-partner in PayPal with Musk, I believe)

(???) Israel key wealth/power figures that fit in

(???) France, Germany, key wealth/power figures that fit in

Consider these [Notes here, to be removed!]:

Josef Aschbacher (new head of ESA – I think he is Austrian fellow)
Francois Macron
Angela Merkel
King Juan (Spain)
Warren Buffett
Jimmy Carter
GW Bush
Kevin (?) - Rachael's contact
Salma Hayek
James Woolsey
David Petraeus
Henry Kissinger
Vladimir(?) Filov (S7 CEO)
Bill Gates (maybe too disruptive – let him come later ???)
Music, film, sports key notable figures as appropriate

New Horizons 2021 Conference of Leaders

Teleconference @ January 12, 2021 on Zoom. This is expected to be a series of teleconferences in order to accommodate all interested participants. There will be multiple sessions for different types and levels of participation.

Direct in-person meetings will follow ASAP thereafter. Dr. Dudziak is able to travel anywhere ASAP now after New Year 2021.

A mutually effective set of protocols for remote and direct communications has been established and will be refined to meet different requirements.

Review teams for financial accountability, legal matters and international protocols have been established and will, following review and acceptance by all participants, be enabled to perform their voluntary duties.

Formalities

All of this including all matters of budgets, schedules, project management, STEM and STEAM team members (principal investigators, project managers, lead scientists and engineers), and all infrastructure matters, will be discussed in the following manners and sequences:

[1] In written and verbal communications to participants and tentative sponsor-supporters, between now (time of receipt of this document) and the January 2021 Teleconference

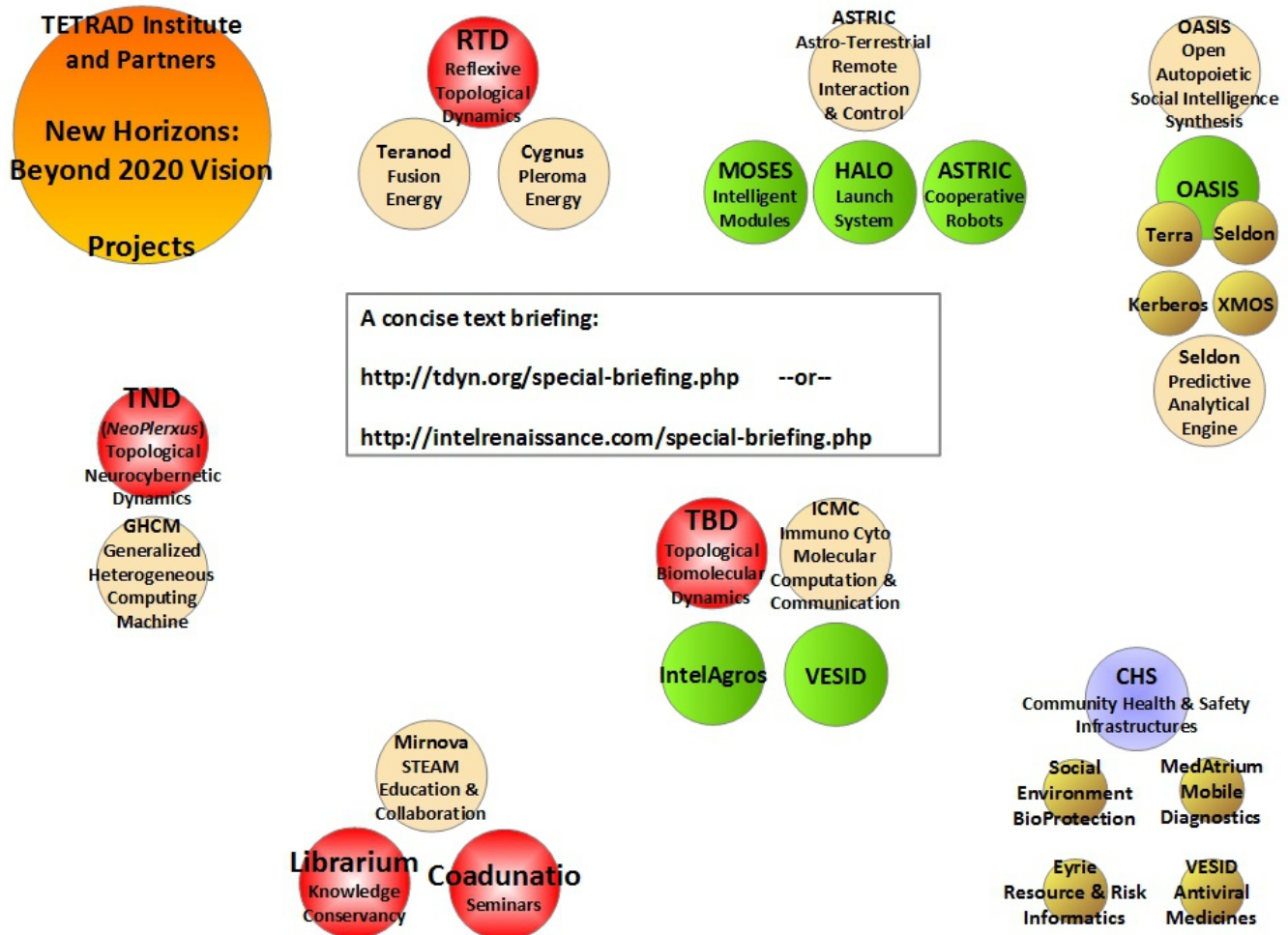
[2] In the January 2021 Teleconferences

[3] Immediately and rapidly thereafter in January 2021, by in-person meetings and written/other formats.

Everything is understood about everything that needs to be done in terms of operations, management, finance, and, of course, the STEM work. Everything is subject to consensus acceptance by the participating mentors, sponsors, and other responsible parties.

Projects Recap (Visual)

This diagram puts all of the New Horizons Projects and some of their related components into perspective.



Contacts

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Appendix

[excerpts from the “Advance RFP Projects” document of 02.December.2020]

hereby announces a suite of collaborative opportunities for participation by individuals and institutions within a set of ten sponsored projects. These project topics span a range of basic research and applications development, encompassing multiple closely-coupled domains of science, mathematics, and related technologies. There are presently several opportunities for participation, beginning in 2021, within several aspects of the projects, all of which possess substantive and reliable forms of support for participating individuals and organizations.

This document provides introductory public information regarding the project subject matter, required qualifications, budgets, schedules and other pertinent data. Additional detailed information on each particular project offering and specific terms for engagement as a project team member within one or multiple projects is available upon direct request.

I. Overview of the Program

New Horizons: Beyond 2020 Vision

This is a program conceived and developed by TETRAD Institute of Complex System Dynamics (“the Institute”, “TI”) in conjunction with an association of partners, sponsors, and supporters from within public and private sectors of society. All support including funding is through grants and contributions to the Institute and free of obligation to any private, public, academic, corporate or governmental sponsor. Program management is conducted by TETRAD Institute in a manner complementary and customary for research projects in the sciences and humanities.

The New Horizons Program addresses significant areas of need for multi-disciplinary, multi-cultural, multi-national collaboration. Each of ten project topics is designed to achieve, within reasonable near-term future months and years, a combination of theoretical, experimental and practical application-enabling results that can be employed in a variety of manners, both commercial and non-commercial, in order to solve several critical problems that currently pose not only intellectual and scientific challenges of interest but also concrete threats for destabilization of human culture and civilization.

There are ten Projects being organized, funded and supported through the Institute and comprising the overall Program, “New Horizons: Beyond 2020 Vision”. These include the maturation and delivery of four application systems that may constitute commercial products which may be offered, under terms of the Projects and the overall Program, for commercial license and with appropriate and customary forms of technology transfer and intellectual property rights management.

Persons with interest for possible inclusion and participation in one or multiple facets of the projects should request detailed information, providing a general introduction to type of interest, capabilities, and backgrounds. Further general points regarding qualifications and requirements, upcoming detailed information releases, application procedures, preliminary workshops and conferences, and other stages in the application and program development process are provided following this brief

summary list of the project topics.

II. List of Projects

There are ten Projects for which detailed RFPs will be released to interested parties. These projects share similarities to previously established and ongoing Projects within the activity space of TETRAD Institute and its seven formal Programs, but there are substantive variations which will be made clear through the future detailed specifications. The name of this public program, “New Horizons: Beyond 2020 Vision”, originates from a philosophical and societal viewpoint that what we need at the present time is a new outlook on how to undertake certain types of scientific and technical projects that necessarily involve research and application, with multiple talents and skillsets, and with a longer term perspective about results and returns of economical natures, and with a deliberate emphasis upon achieving results that can be utilized successfully in many different areas of life.

The “New Horizons” imply a “going beyond” the limitations of simply “2020 vision” metaphorically, and “going beyond” the limitations of how we as a society, engaging in the “STEM” domains (science, technology, engineering, mathematics – and also medicine as well – and also different facets of the humanities in conjunction with the traditional sciences – can move beyond the boundaries of how we have been doing things up to and through the very unique times characterized by this recent year, 2020 in the widely-used Julian calendar. As a planetary society we have come in the year 2020 to face many first-of-kind challenges through the entire COVID-19 pandemic experience, which continues even at the present, as this document is being prepared and released.

Thus, “New Horizons” is very much about New Thinking and New Action in the way we do science and technology that is often at the edge of conventional accepted thinking, and which can promise to lead us to multiple discoveries that may be rich with multiple useful applications for our future.

These are the ten Projects that comprise New Horizons:

[1] ASTRIC

Astro Terrestrial Remote Interaction and Control, and specifically, Asteroid Reconnaissance Intervention and Control. Cooperative modular multi-function robot networks capable of conducting autonomous high-fault-tolerance missions in space including performance of tasks for modification of asteroid trajectories, orbits and potential collisions with Earth.

Included is the core technology of structural components and assembly/disassembly mechanisms for ASTRIC units, known as MOSES (Modular Organic-assembly Space-based Engineering System), and HALO (High-Altitude Lift-Launch-Land Operations), an architecture for space-based operations that eliminates the need for conventional heavy rockets and reduces other engineering complexity and cost factors for launching and landing payloads to and from planetary orbit. HALO employs a relocatable platform at a very high altitude, constructed of modular pod units, for use as a waypoint

base for traffic of vehicles to and from Earth and to and from space-based locations.

This project is intended and planned to grow and expand significantly within the next ten years. There will be multiple steps and stages for different teams as work progresses into system implementation.

Related background information: www.astra.tdyn.org and www.astric.tdyn.org

[2] ICMC_TBD

Immuno Cyto Molecular Computation/Communication and Topological Biomolecular Dynamics Research is focused upon two principle areas:

[a] VESID (Viral Entry Structural Integrity Disruption) – design of prophylactic and therapeutic medications for interruption and prevention of host cell entry processes via specific targeting of viral envelope topological structures. VESID is based upon topological models of cellular and viral signaling and recognition which contribute to the mechanics of infection, inflammation and immune response.

Related background information: www.intelrenaissance.com (see “VESID”)

[b] Topological order and efficiency, conformal geometries, and biosoliton dynamics within autoimmune disorders, with special attention to multiple sclerosis and dementia progressive pathology. The medical domain of special study is that is Neuronal Electrochemical Stressors disrupting biosoliton molecular signaling and leading to accelerative demyelination and microtubule brittleness and fragmentation and the foundational stages of MS, AD and other ND disorders.

[3] Mirnova

Educational and internship programs within the arts and sciences, including four main focus areas:

[a] Content assimilation, organization and editing processes involved in the Librarium, a knowledge conservation project. The Librarium as a defined entity involves the preservation, conservation and sustenance of scientific, technical and humanities knowledge and skills for long-term future needs and in parallel for knowledge transfer to and among diverse communities of learners and active STEM developers.

[b] EcoVita Oasis - Neurophysiological Wellness Activities involving Natural Environment Experiences. This aspect of Mirnova activity is directly connected with youth education also, and with practical therapeutic derivations from the more theoretical ICMC_TBD Project. This activity also links with the IntelAgros Project.

[c] Participation in active research and development projects as interns and apprentices, within the context of personalized, mentored education that is integrated with other school programs (both direct-engagement and distance-based). Such participation is a key part of all the New Horizons Projects.

[d] Coordination and management of special merit scholarship programs for youth and adults in the arts and sciences with a focus upon physics and medicine. These scholarships are supported by a number of private and public sponsors and they are administered by TETRAD Institute with the collaboration of other project team members.

Related background information: www.mirnova.tdyn.org and www.librarium.tdyn.org

[4] CHS (Community Health Sustainability)

The integration of BioProtection practices and methods, MedAtrium mobile diagnostics and therapies, Eyrie public activity and resource management informatics and VESID medicinal solutions, tailored and optimized for specific civic and social entities. MedAtrium constitutes a highly modular and reconfigurable architecture for rapid-deployment medical diagnostics and therapeutics, oriented to large-scale public needs in epidemic, pandemic and other emergency response situations. BioProt incorporates informational methodologies, physical procedures, and social education in order to address the multi-origin, multi-agent problems of microbially-transmitted infectious disease and other health conditions through the environments of homes, schools, workplaces, and other sites of human congregation and interaction.

Related background information: www.intelrenaissance.com

[5] NeoPlexus (GHCM – Generalizable Heterogenous Computing Machine)

A biologically-inspired architecture based upon quantum biological models, incorporating principles of quantum computing and focused upon pattern discovery within very large and uncertain data spaces. Distinguished from qubit-based quantum computing based upon Turing Machine architectures. Technological implementation involves protein-polymer conjugate arrays constructed within a graphene-silicon substrate. GHCM aims, as one of its primary purposes, to enable detection and recognition of unique and similar patterns of information through a form of topological resonance at the macromolecular level, with mapping of such pattern state spaces into Turing Machine computation that may include, for specific tasks, the employment of modules that include qubit-based quantum computer machines.

Related background information: www.neoplexus.tdyn.org

[6] OASIS_Terra (Open Autopoietic Social Intelligence Synthesis)

An adaptive digital environment for social communication, collaboration, education, entertainment and trading functions, including Eyrie, a subset of OASIS focused upon geospatial public activity, health and resource management informatics, and Seldon, an open-architecture engine for predictive analytics in the modeling of psychosocioeconomic dynamics (PSED).

Within the operational space of the OASIS world environment ("Terra") are information trading functions known as Kerberos constituting a massively-distributed multi-logic encryption and privacy system for digital securities, offered in the relational structure of "private bank" client services.

Related background information: www.intelrenaissance.com (see "OASIS")

[7] IntelAgros

Modular networks of compact, portable units which provide agricultural and environmental monitoring, agricultural control of irrigation, fertilizers and pest abatement, and hybrid electrical power generation. The network may be small (single-units for small gardens and farms) or extensive for large agri-operations. Networks linked together via internet connectivity provide dynamic parallel distributed computing resources as well as power management and water/chemical management.

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Related background information: www.mirnova.tdyn.org

[8] RTD_QR (Reflexive Topological Dynamics)

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Related background information: www.primus.tdyn.org

[9] Teranod

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consequently require extraordinary power sources and confinement architectures.

Related background information: www.primus.tdyn.org

[10] Cygnus

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