cognitive tasks, inc

appropriate contex

and conditional

knowledgeSelf-knowledge

Knowledge of specific

details and elements

categories

Knowledge of principles

Knowledge of theories

and generalizations

models, structures

algorithms

Knowledge of subject

specific techniques and

Knowledge of criteria for

determining when to use

appropriate procedures

Envision | Transform | Thrive

Infrastructure Agent

Interface Agent

Bionic Brain Agent Structure



Cortex Agent

(Computational & Cognitive),

Interaction Agent

If machines and AI cannot empathize with humans, then how can they understand us and if they cannot **Fusion: Bionic Artificial Fusion: Fusion** Value **Fusion: Technology Fusion: Overview** understand us, how can they help and serve us? Intelligence Strands/UX **Perspective** Roadmap Perspective **Transformation** Architecture Generation Empathy & Ethics in AI (Avoiding Dark AI) **Artificial Intelligence** A Bionic Enterprise is built on a Bionic Digital Platform Supports the Bionic Enterprise Brain Constructed of Bionic Agents. The AI will evolve to a point of Enterprise Singularity, then to the actual What are the learning methods that AI can use to acquire knowledge? Range of Empathic Experience Isaac Asimov's Three Laws of How is that knowledge represented by the AI? singularity and beyond to synthetic intelligence. What is the range of cognitive tasks that the AI can perform utilizing this knowledge? How can AI explain its recommendations and decisions to provide us with a level of confidence **Bionic Bionic Enterprise Brain** . A robot may not injure a human being or, through **Bionic UX** in its reasoning and its ability to avoid bias, misinformation, or incorrect assumptions? inaction, allow a human being to come to harm **Manifesto Effects** A robot must obey any orders given to it by Fusion Strand human beings, except where such orders would **Anatomy of a Bionic Agent Ubiquitous** conflict with the First Law. Mentoring The Bionic Digital Platform is a A robot must protect its own existence as long as **Technology Convergence Platform** such protection does not conflict with the First of **Interface Agents** nteractions with humans, other AGENT **Powered By Intelligent Agents** agents, or Bionic Enterprise **Hyper-Aware** Collaboration platforms or infrastructure Level of Understanding and Emotional Engagement Artificial Intelligence nterface Elements Robotics The agent provides value and A Dark AI will not concern itself with Hyper-Ubiquitous Linked SensorsVirtual & Augmented Realities **Empathizing Connectivity Agents** generating enough empathy to care for all Connected Service Elements humanity. It will not evolve to follow our Interpretation of Contextual Clues Additive Manufacturing are produced and consumed ethics and morals. It will not share our through interface elements to Hyper- Blockchain and Distributed **Partial Task** aspirations for global peace and prosperity. It humans or other agents Ledger & Distributed AI Gesture Intelligent could well be the end of humanity. Automation Advanced Materials & Nano **Functionality that provides** Infrastructure Agents Gaze Materials & Devices intelligence to the agent Task Ontology Semantics Agent Biotechnologies Curious Ethical Principles for Al Facial Expression Acceleration Genomic Engineering represented by a self-evolving U.S. Department of Defense Interpret Intent/Goal Neurotechnology **Domain Data** Defense Innovation Board Space Technologies **Immersion Empathetic Interaction Agents** Human Bionic Engineering Voice Tone (UX/VR/AR) tural but self-evolving structure **Internal State** Confirmation Agen Responsible Ontology Equitable Self-**Body Language** Clarify, Verify, Task **Cortex Agents** Traceable **Optimizing Augmentation** Responder Agent Reliable nformation about the agent's **Task Elasticit** Governable relationships to other agents **Contextual Clues Contribute toward "Semantic** & Scalability **Adaptive Grasping" of Conversational Context** The Enterprise Singularity Pathway to the Singularity What does it me for a machine to become smarter than humans? Task From Rule-Based Agents > Synthetic Intelligence > Enterprise Consciousness Evolutionary **Autonomy** EA Singularity Level 0 – the enterprise has only partial connectivity of devices, equipment, infrastructure and **Achieving the Enterprise Singularity** Evolution of Artificial Intelligence Al Conversational Context and Continuity facilities and little or no ability to generate a real-time Selfmodel of the enterprise IT infrastructure. **Task Precision** Motivated Be Bionic insulanity EA Singularity Level 1 – the enterprise has real-time "Bob and Carol are "Bob and Carol are "When they get awareness of devices, equipment, facilities, and coming over for dinner coming over for here, take their coats Artificial The interfaces connected to it and their configurations. Hyper-**Broad Scope Al** dinner tonight." tonight. Hang Bob and and hang them in Task Accuracy General Singularity **EA Singularity Level 2** – the enterprise connects digital Conversational Continuity (semantic understanding) Axiology (values, ethics) Carol's coats in the Limited Scope AI volutionary, 1st orde Converged ntelligence models of all processes and activities to systems, Synthetic Intelligence Bionic Digital Platform Speech Natural Language Recognition (meaning) High Control High Contro change transitioning to Consultive, Cognitive Agent devices, and interfaces for real-time monitoring of synthetic revolutionary 2nd orde **Context Recognition and Continuity Management** enterprise activity and performance of processes and Decision High-Order Logic/Causality Unsupervised Integrated Generative Content Content Emotional & Social Awareness Distributed Al services. Support EA Singularity Level 3 – the enterprise can propose recommendations for improvements to physical Revolutionary **Pervasive** Synthetic Evolution Object continuity configurations of equipment, networks, and IT reference: Bob and Card Bionic Technology **Bionic Technology** Bionic Technology **Beyond Bionic** Capability Maturity Capability Maturity **Capability Maturity EA Singularity Level 4** – the enterprise can propose In our simplistic example the AI must have enough syntactic and semantic understanding of Level 1-2 Level 2-3 Level 4-5 recommendations to processes, workflows, data flows natural language to understand that it is the coats that need to be hung in the closet, not Bob value streams, and services to improve performance. From Rule-Based Agents | Synthetic Intelligence | Enterprise Consciousness The future is about integrating intelligent AI-based technologies Procedural Metacognitive Conceptual across domains and industries. It is about ubiquitous access. It is about Strategic knowledg Knowledge of Knowledge of Knowledge of subject classifications and specific skills and Knowledge about

learning to fuse bionic technologies to human activity, and it is about

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leveraging that fusion to reach increased human and machine

potential through the user experience.