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(71) Applicant: **STRONG FORCE VCN PORTFOLIO 2019, LLC** [US/US]; 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US).

(72) Inventors: **CELLA, Charles, Howard**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **CARDNO, Andrew**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **PARENTI, Jenna**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **LOCKE, Andrew, S.**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **KELL, Brad**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **EL-TAHRY, Teymour, S.**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **GOODMAN, Benjamin, D.**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **FORTIN, JR., Leon**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **BUNIN, Andrew**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **SHARMA, Kunal**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US). **CHARON, Taylor**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US).

(US). **MALCHEV, Hristo**; c/o Strong Force VCN Portfolio 2019, LLC, 501 East Olatas Boulevard, Suite 200, Fort Lauderdale, Florida 33301 (US).

(74) Agent: **NYE, Michael** et al.; 409 E Jefferson Ave, 5th Floor, Detroit, Michigan 48226 (US).

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(54) Title: SYSTEMS, METHODS, KITS, AND APPARATUSES FOR DIGITAL PRODUCT NETWORK SYSTEMS AND BIOLOGY-BASED VALUE CHAIN NETWORKS

(57) Abstract: A digital product network system generally includes a set of digital products each having a product memory, a product network interface, and a product processor programmed with product instructions; a product network control tower having a control tower memory, a control tower network interface, and a control tower processor programmed with control tower instructions; and a digital twin system defined at least in part by at least one of the product instructions or the control tower instructions to encode a set of digital twins representing the set of digital products.



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