

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5419638

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	JAMES HERRIOT	06/20/2009
RECEIVING PARTY DATA		
Name:	NEXTGEN AEROSCIENCES, LLC	
Street Address:	111 W. PROSPECT STREET	
City:	SEATTLE	
State/Country:	WASHINGTON	
Postal Code:	98119	
PROPERTY NUMBERS Total: 1		
Property Type	Number	
Application Number:	16267921	
CORRESPONDENCE DATA		
Fax Number:	(704)444-9137	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>		
Phone:	704-347-6477	
Email:	pschmid@burr.com, lynn_mcmiller@mcnair.foundationip.com, mcnairip@burr.com	
Correspondent Name:	CHAD L. THORSON	
Address Line 1:	101 S. TRYON STREET, SUITE 2610	
Address Line 2:	BANK OF AMERICA PLAZA	
Address Line 4:	CHARLOTTE, NORTH CAROLINA 28280	
ATTORNEY DOCKET NUMBER:	738233/09116	
NAME OF SUBMITTER:	CHAD L. THORSON	
SIGNATURE:	/CHAD L. THORSON, REG. NO. 55675/	
DATE SIGNED:	03/13/2019	
Total Attachments: 7		
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NEXTGEN AEROSCIENCES, LLC

AMENDED AND RESTATED CONFIDENTIAL INFORMATION, INTELLECTUAL PROPERTY ASSIGNMENT, NON-SOLICITATION AND NON-COMPETITION AGREEMENT

I, **JAMES HERRIOT**, enter into this Amended and Restated Confidential Information, Intellectual Property Assignment, Non-Solicitation and Non-Competition Agreement ("Agreement"), as consideration for the purchase of Common Units of NextGen AeroSciences, LLC (the "Company") and as a condition of my employment by the Company.

I understand that systems thinking, in the context of complex adaptive systems, provides a framework for dynamic trajectory management in a NextGen-based National Airspace System (NAS). The tools developed under this framework would draw their power from agent-based technologies applied through computationally efficient algorithms. The approach would shift the emphasis of air traffic control from managing individual aircraft behaviors to managing systemic behavior of air traffic in the NAS while allocating an increased amount of decision-making to individual aircraft. A system built on the approach would provide the ability to know when regions of airspace approach being "full," that is, having non-viable local solution space for optimizing trajectories in advance, and then to provide mitigation procedures guaranteeing the highest possible safety and efficiency of resolution. The capability would also allow for optimization of domain-specific parameters such as airspace capacity and business case metrics.

I am aware that the Company is being formed to research, develop, test, refine and implement unique, proprietary and confidential ideas, software, designs, and architecture, for systems employing agent-based technologies applied through computationally efficient algorithms for use in dynamic trajectory management in NextGen airspace systems. Dynamic trajectory management system concepts include but are not limited to integration of digital communications systems between a flight operations center, aircraft, and the Air Navigation Service Provider (ANSP), as well as information systems supporting trajectory optimization functions. These systems and their applications implement databases, models and software, and establish and maintain technology, research and development, marketing, equipment procurement and design alliances and relationships, as a necessary first step in the development of NextGen dynamic trajectory management tools. These tools utilize "state of the art" logistics and operations systems, software, databases, models and other commercial products, services or technology, based in part on innovations, discoveries, inventions or other intellectual property ("Property"). I am also aware that the Company's business, as currently contemplated, includes all of the activities indicated in the preceding sentences of this paragraph (the "Business").

To the extent that I have developed Property, whether patented or unpatented, that is applicable, useful or relevant to the Business, as the same may subsequently evolve, I am willing to grant a license to the Company to use the Property as provided herein (in Section 3A). Further, to encourage expansion of the Business to include development of software and related services for improving operations of air carriers (operated pursuant to FAR Parts 121 and 135 of the Federal Aviation Regulations), I am willing to include in the license to use Property granted to the Company pursuant to Section 3A, the right to use sequencing software and other Property that I have developed with Bruce K. Sawhill for use by small air-taxi operations, including an optimization engine and a graphics-based system for showing how the software functions. A more detailed description of the Property is included on Schedule 2 as contemplated pursuant to Section 3A(iii) hereof.

Based on the foregoing, I agree with the Company, intending to be legally bound, as follows:

1. **Definitions.**

A. For purposes of this Agreement, the terms "you" or the "Company" mean NextGen Sciences, LLC, a Virginia limited liability company.

B. For purposes of this Agreement, "Confidential Information" means knowledge, documents, materials and information, not generally known to the public, regarding matters relating to the Company and/or its business, finances, financial condition, owners, technology, products, services, research and development, marketing, operations or plans, and includes, but is not limited to, technical data, trade secrets or know-how relating to the Company's existing or future products, services, technology, research, development, marketing, equipment procurement plans or designs, owners and partners (including, but not limited to, technology research and development partners and/or aircraft and other equipment vendors), and customer lists and customers (including, but not limited to, customers of the Company on whom I have called or may call or with whom I have become acquainted or may become acquainted before and after the formation of the Company). Without limiting the generality of the foregoing, "Confidential Information" also includes, but is not limited to, the following types of information, and other information of a similar nature (whether or not reduced to writing or still in development): designs, concepts, drawings, ideas, inventions, specifications, techniques, technologies, discoveries, models, data, source code, object code, software, logistics systems, documentation, diagrams, flow charts, research, development, processes, procedures, know-how, new product or new technology information, marketing plans, techniques and materials, documents and concepts, timetables, strategies and development plans (including prospective trade names or trademarks), vendor and supplier names and contacts and other information related to vendors and suppliers, information relating to government regulation, compliance, support or assistance, equipment procurement and/or design plans or arrangements, pricing policies and financial information (including budgets, forecasts and financial statements and information).

2. **Restrictions on Use of Confidential Information.**

A. I agree at all times during the term of my employment and thereafter, to hold all Confidential Information in strictest confidence and, without the prior written authorization of the President of the Company, that I will not directly or indirectly disclose or use any Confidential Information, except for the benefit of the Company.

B. I agree that I will not, during my employment with the Company, improperly use or disclose any proprietary information or trade secrets of any former or concurrent employer or other person or entity and that I will not bring onto the premises of the Company any unpublished document or proprietary information or property belonging to any such employer, person or entity, unless consented to in writing by such employer, person or entity and such consent is provided to the Company, and is expressly and in writing acknowledged as acceptable to the Company, in advance of any such use or disclosure.

C. I agree to notify any third party with which I may become employed or engaged in the future of the existence of this Agreement and my obligations hereunder. In the event that my employment with the Company ceases or terminates for any reason, I hereby consent to the Company notifying my new employer about my rights and obligations under this Agreement. I represent and warrant to you that I am not subject to any agreement with any former employer or other third party (including, without limitation, a third party that I may have served as a consultant or adviser to) imposing confidentiality, disclosure, work product assignment, noncompetition or nonsolicitation obligations on me other than as specified in Schedule 1 attached hereto (which schedule shall be submitted to and accepted by you in advance of the Company's execution of this Agreement).

D. I recognize that the Company has received, and in the future will receive from third parties, certain confidential or proprietary information subject to an agreement or obligation on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. I agree to hold all such confidential or proprietary information in the strictest confidence and not to disclose it to any third party or to use it except as necessary in carrying out my work for the Company consistent with the Company's agreement with such third party.

E. I represent and warrant to the Company that I do not desire to use or gain, and shall not use or gain, whether directly or indirectly, any competitive advantage from any Confidential Information for myself or for any person, firm, business, corporation or other organization or entity, other than the Company. Upon cessation or termination of my employment with the Company, regardless of the reason for such cessation or termination, or at any other time at the Company's request, I agree to deliver promptly to the Company at its principal office all copies of all Confidential Information in my possession, and I agree that I will not make or retain

any copies of any Confidential Information in such case, and that I will provide written certification of my compliance with these obligations.

F. I agree to refrain from making any oral, written or electronic statements, disclosures or confirmations pertaining to the Company or any of its affairs or personnel to news, press, information, media or other similar organizations or their representatives, and will refer all requests for, and any inquiries regarding, such matters to the Company's Chief Executive Officer or its President.

3. **Work Product Assignment.**

A. Any Property, including inventions, if any, whether patented or unpatented, which I made prior to the date hereof are excluded from the scope of this Agreement, except that, solely to the extent such Property is applicable, useful or relevant to the Business, as currently contemplated or as the same may evolve during the term of my involvement with the Company, I hereby grant to the Company a perpetual, non-exclusive, transferable, royalty-free license to use such Property in the Business. It is understood and agreed by the parties that any license granted to the Company pursuant to this Section 3A shall not preclude the grant of any license to use the Property for any use, except as otherwise provided in Section 6. To preclude any possible uncertainty, I have set forth on Schedule 2 attached hereto:

(i) a complete list of all Inventions that I have, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to my relationship with the Company, that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement;

(ii) any pre-existing confidentiality, work product assignment, non-competition or non-solicitation obligations; and

(iii) a brief description of the Property that I am assigning to the Company pursuant to this Section 3A. I hereby agree to assist the Company in any manner as shall reasonably be requested by the Company to protect the Company's interest in the Property that I am assigning to the Company and to execute and deliver such legal instruments and other documents as the Company shall request in order for the Company to obtain protection of the Property throughout the world, including, but not limited to, declarations of inventorship, powers of attorney and assignment documents.

B. I agree that I will promptly make full written disclosure to the Company of, and will hold in trust for the sole right and benefit of the Company, all copyrights, patents, trademarks, trade secrets, and all other right, title and interest in and to any and all ideas, concepts, techniques, developments, trade secrets, inventions, processes or works of authorship, whether or not patentable or registrable or protectable under copyright or similar laws, which I may solely or jointly conceive or develop or reduce to practice, or cause to be conceived or developed or reduced to practice, during the course of performing work for the Company (or, on behalf of the Company, its customers, vendors or partners), regardless of whether during regular work hours or otherwise (the "Work Product").

C. All Work Product shall belong exclusively to the Company and shall, to the extent legally permissible, be considered a work made by me for hire for the Company within the meaning of Title 17 of the United States Code and at common law. To the extent that the Work Product may not be considered work made by me for hire for the Company, I hereby assign at the time of creation of the Work Product, without any requirement of further consideration, any and all right, title or interest I may have in such Work Product. Any and all rights of whatever kind and nature, whether existing now or hereafter, to make, use, sell, license, distribute or otherwise transfer or reproduce Work Product in any and all media throughout the world, are and shall be the sole property of the Company. I hereby agree to assist the Company in any manner as shall reasonably be requested by the Company to protect the Company's interest in Work Product and to execute and deliver such legal instruments and other documents as the Company shall request in order for the Company to obtain protection of the Work Product throughout the world, including, but not limited to, declarations of inventorship, powers of attorney and assignment documents. I further agree to assist the Company by executing and delivering (or causing to be executed and delivered, as appropriate) such other documents and instruments which the Company deems necessary to enable it to

evidence, perfect and protect its rights, title and interest in and to the Work Product. I agree that my obligation to execute and deliver, or cause to be executed and delivered, any such instrument or document shall continue after my cessation or termination of employment with the Company, regardless of the reason for such cessation or termination. If the Company is unable because of my mental or physical incapacity or disability or for any other reason to secure my signature to apply for or to pursue any application for any United States or foreign patents or copyright registrations assigned to the Company in accordance herewith, then I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, to act for and in my behalf and stead to execute and file any such applications and to do all other lawfully permitted acts to further the prosecution and issuance of letters patent or copyright or trademark registrations with respect thereto with the same legal force and effect as if executed by me. I will at any time, including after cessation or termination of my employment with the Company, upon request, communicate to the Company, its successors, assigns, or other legal representatives, such facts relating to the Work Product as may be known to me, and to testify, at the Company's expense, as to the same in any interference or other legal proceeding.

D. I will make and maintain adequate and current written records and evidence of all Work Product, including, as applicable but without limitation, drawings, work papers, graphs, computer code, documentation, records, data and any other documents, all of which shall be and remain the property of the Company, and all of which shall be surrendered to the Company upon request and upon the cessation or termination of my employment with the Company, regardless of the reason for such cessation or termination, and shall not be disclosed to any third party without the prior written consent of the Company.

E. I hereby waive, and further agree not to assert, any moral rights in or to the Work Product, including, but not limited to, rights to attribution and identification of authorship, rights to approval of modifications or limitations on subsequent modifications, and rights to restrict, cause or suppress publication or distribution of the Work Product.

4. Non-Solicitation of Customers, Vendors.

During the period of my employment with the Company and for a period of eighteen (18) months thereafter, regardless of the reason for my cessation or termination of employment with the Company, I shall not, on my own behalf or on behalf of any third party, or in any capacity whatsoever, directly or indirectly: (i) solicit any persons or entities with which the Company had contracts or orders, or with which the Company was negotiating or pursuing contracts or orders during the twelve (12) month period prior to the cessation or termination of my employment with the Company, or (ii) induce, suggest, solicit, persuade or recommend to any person or entity to terminate, cease, alter or refrain from renewing or extending his, her, or its contract or relationship with the Company, or become a client, customer, vendor, consultant or employee of anyone other than the Company.

5. Non-Solicitation of Employees, Consultants.

During the period of my employment and for a period of eighteen (18) months thereafter, regardless of the reason for the cessation or termination of employment with the Company, I shall not, on my own behalf or on behalf of any third party, or in any capacity whatsoever, directly or indirectly, induce, suggest, solicit, persuade or recommend to any employee, consultant or agent of the Company, who was an employee, consultant or agent of the Company at the time of, or within the six (6) month period prior to, the cessation or termination of my employment, that he or she terminate, cease, alter or refrain from renewing or extending his or her employment, consulting or other relationship with the Company, or become an employee, consultant, client or customer of anyone other than the Company.

6. Non-competition.

I acknowledge that my employment with the Company will enable me to obtain, and will otherwise provide me with access to, information, knowledge and know-how that is significant to the Business, and will also enable me to form certain relationships with individuals and entities with which the Company (currently or in the future) conducts (or may in the future conduct) business, including, without limitation, in the areas of research and development of ideas, technology, software, designs and architecture for systems employing agent-based technologies for use in dynamic trajectory management systems, the related applications, databases, models,

software, and other technology and proprietary information involved in the development of dynamic trajectory management tools, and related procurement, design and customization of equipment, development of a unique brand and identity, and the marketing and sale of products and services. I further acknowledge that the Company has a strong, demonstrable and legitimate business interest in prohibiting me from competing with or assisting others in competing with the Company (including, among other things, preventing harm to the Company's goodwill and proprietary interests in the Business), and that an eighteen (18) month termination restriction against competition, as provided herein, is reasonably necessary to protect these interests. Therefore, I agree that during my employment and for a period of eighteen (18) months following any cessation or termination of my employment with the Company, regardless of the cause or reason (or lack of cause or reason) of any such cessation or termination, I will not, without the prior written consent of the Company, which consent may be withheld by the Company in its sole and absolute discretion, directly or indirectly, provide any service, support, product or technology (as an employee, licensor, consultant or otherwise), to any person or entity anywhere in the world, if such service, support, product or technology involves or relates to the Business in any material respect, including, without limitation, any company engaged in dynamic trajectory management in a NextGen-based National Airspace System and/or any related products or services (a "Restricted Business"), nor shall I, directly or indirectly, own, control, manage, operate, be employed by or serve as a consultant to or finance, or participate in the ownership, control, management, operation or financing of, or hold or own any stock, equity or other financial or ownership interest in, or have any right to compensation from, any third party engaged in a Restricted Business (other than ownership of less than 1.0% of a class of equity securities of a company which securities are listed on a national securities exchange or traded on NASDAQ or over-the-counter). I further acknowledge that my employment with the Company constitutes fair and adequate consideration for my agreement not to engage in such conduct within eighteen (18) months after the termination or cessation of my employment, regardless of the cause or reason (or lack of cause or reason) of such termination or cessation.

7. Miscellaneous Provisions.

A. Effective date. This Agreement shall have been first executed by me and submitted to the Company for acceptance as of the date hereof and shall become fully effective as of such date.

B. Remedies. I agree that any breach or threatened breach of this Agreement will cause irreparable injury to the Company and that money damages alone will not provide an adequate remedy to the Company. If I commit a breach or threaten to commit a breach of any of the provisions of this Agreement, the Company shall have the right, in addition to any other available rights or remedies, to seek and obtain specific performance of this Agreement and/or injunctive relief restraining and enjoining me, and any and all employers, partners, agents, servants, consultants, employees and all other persons acting for or with me, from any further or continued breach hereof. In addition, I agree that the Company may take all such other actions and seek all remedies available to it under law or in equity and shall be entitled to such damages as it can show it has sustained by reason of my breach, and shall be entitled to recover its reasonable attorney's fees and costs incurred in such actions.

C. Severability. In the event that any term or provision of this Agreement is held by a court of competent jurisdiction to be invalid and unenforceable, the remaining portions of the Agreement shall be severable from such portion and the remainder of this Agreement shall remain in full force and effect, and shall be valid and enforceable.

D. Entire Agreement; amendment; waiver. This Agreement and the Operating Agreements of the Company entered into by me in connection with the formation of the Company set forth the entire agreement and understanding between the Company and me relating to the subject matter hereof, and merges and supersedes all prior or other agreements, discussions or understandings between us, or any other statements, assertions, promises, assurances or arrangements. No modification of or amendment to this Agreement will be effective unless in writing signed by the party to be charged. The waiver by any party hereto of the other party's prompt and complete performance or breach or violation of any provision of this Agreement shall be effected solely in a writing signed by such party, and shall not operate nor be construed as a waiver of any subsequent breach or violation, and the waiver by any party hereto to exercise any right or remedy which he or it may possess shall not operate nor be construed as the waiver of such right or remedy by such party, or as a bar to the exercise of such right or remedy by such party, upon the occurrence of any subsequent breach or violation.

E. Binding on successors; third party beneficiaries. The provisions of this Agreement shall be binding upon me whether I am employed by the Company, any of its divisions, subsidiaries or affiliates, or any entity that acquires all or substantially all of the assets, stock or business of the Company, or any of its divisions, subsidiaries or affiliates. I further acknowledge and agree that the Company's divisions, subsidiaries, affiliates, successors and assigns are third party beneficiaries of this Agreement, and that this Agreement is intended for the benefit of those persons and entities as well as the Company.

F. Employment at will. Nothing herein shall be interpreted or construed to be a guarantee of employment, or of continued employment, or to otherwise limit the Company's right to terminate my employment at any time or for any reason.

G. Right to consult with counsel. I acknowledge having read and considered all of the provisions of this Agreement carefully, and having had the opportunity to consult with counsel of my own choosing, and, given this, I agree that the obligations created hereby do not unreasonably impair my ability to conduct any unrelated business or to find gainful work in my field.

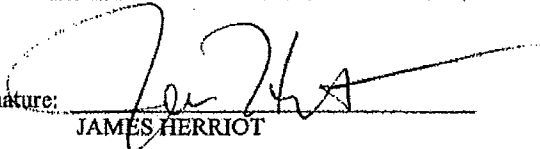
H. Headings. The headings in this Agreement are for convenience of reference only, and shall not constitute terms or conditions, or affect the construction, meaning or interpretation, of this Agreement.

I. Survival. This Agreement shall survive and remain in effect after the cessation or termination of my employment, regardless of the cause or reason (or lack of cause or reason) for same, and shall survive and remain in effect irrespective of the expiration or termination of any other agreement entered into in connection therewith.

J. Right to Discuss Terms and Conditions. Nothing in this Agreement restricts or prohibits you from discussing any terms and conditions of your employment with other employees of the Company.

Dated: June 20, 2009

NEXTGEN AEROSCIENCES, LLC

Signature: 

JAMES HERRIOT

By: 

Name: WILLIAM VAN VEEBBERG

Title: RESIDENT

Witness: _____

SCHEDULE 1

List of all pre-existing confidentiality, work product assignment, non-competition and/or non-solicitation obligations (to be reviewed and approved by the Company in advance of its execution and delivery of this Agreement):

1. Confidentiality, etc.: Employment contract with DayJet Corporation
2. Confidentiality, non-disclosure: FlyMiwok

SCHEDULE 2

(i) List of all Inventions that I have, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to my relationship with the Company (to be reviewed and approved by the Company in advance of its execution and delivery of this Agreement):

The following IP was developed as an employee of other entities, and is owned by those entities:

1. Various IP developed as an employee of BiosGroup, Santa Fe, NM (1998-2002)
2. Various IP developed as an employee of DayJet Corporation (2002-2008)

The following software was developed by me and is entirely owned by me. Some of the underlying algorithms were developed jointly in concert with Bruce Sawhill. Therefore all the following IP is either entirely owned by me, or jointly owned by Bruce Sawhill and me. There are no licenses outstanding or other encumbrances on this IP, other than the current new non-exclusive licensing of some of this IP to NextGen AeroSciences LLC (detailed in this agreement).

1. Agent-Based optimization algorithms and software for dynamic flight plan planning/replanning and management.
2. Visualization approaches and interactive graphics software for display of real-time flight itinerary management.
3. Algorithms and software for computing real-time flight trajectories, using dynamic arbitration and conflict resolution.
4. Three dimensional display of dynamically computed flight trajectories.
5. PartEcon (Particle Economics Research Institute) abstract Agent Based Model of the economy
6. Boolean Network Modeling and related code for researching attractor structures in network dynamics
7. Artificial Intelligence and Cognitive Science algorithms and software for pattern detection, novelty generation.
8. Software for researching and running RBM (Restricted Boltzmann Machines), visualization, interactive operation.

(iii) A brief description of the Property that I am assigning to the Company pursuant to Section 3A(iii) (use additional pages or attach a description as appropriate):

I am assigning items 1 through 4 above to NextGen AeroSciences in the form of a non-exclusive license.

1. Agent-Based optimization algorithms and software for dynamic flight plan planning/replanning and management.
2. Visualization approaches and interactive graphics software for display of real-time flight itinerary management.
3. Algorithms and software for computing real-time flight trajectories, using dynamic arbitration and conflict resolution.
4. Three dimensional display of dynamically computed flight trajectories.

RECORDED: 07/07/2016

RECORDED: 03/13/2019

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