11-26-2004

Form PTO-1594
(Rev. 03/01)
OMB No. 0651-0027

102889863

T U.S. DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Docket No. 51270-30

Tab settings ⇨ ⇨ ⇨ ▼ ▼ ▼ ▼ ▼ ▼ ▼ ▼

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies): 11-22-04

Haestad Methods, Inc.
Bentley Systems, Incorporated

☐ Individual(s) ☐ Association
☐ General Partnership ☐ Limited Partnership
√ Corporation-State of
Connecticut and Delaware
☐ Other _____

Additional names(s) of conveying party(ies) attached? ☐Yes ☒ No

2. Name and address of receiving party(ies)

Name: Wells Fargo Foothill, Inc.
Internal Address: _____
Street Address: One Boston Place, 18th Floor
City: Boston State: MA Zip: 02108

☐ Individual(s) citizenship _____
☐ Association _____
☐ General Partnership _____
☐ Limited Partnership _____
☒ Corporation-State of California
☐ Other _____

If assignee is not domiciled in the United States, a domestic representative designation is attached: ☐ Yes ☐ No
(Designations must be a separate document from assignment)
Additional name(s) & address(es) attached? ☐ Yes ☒ No

3. Nature of conveyance:

☐ Assignment ☐ Merger
☐Security Agreement ☐ Change of Name
☒ Other: Joinder and Amendment Agreement

Execution Date: October 29, 2004

4. Application number(s) or registration number(s):

A. Trademark Application No.(s)
See Attached Annex H.

B. Trademark Registration No.(s)
See Attached Annex H.

Additional number(s) attached ☒Yes No

5. Name and address of party to whom correspondence concerning document should be mailed:

A.F. David Steiner
Morrison & Foerster LLP
1290 Avenue of the Americas
New York, New York 10104

6. Total number of applications and registrations involved:..... 113

7. Total fee (37 CR 3.41).....$ 2,840.00

☐ Enclosed
☒ Authorized to be charged to deposit account

8. Deposit account number:
03-1952 (Referencing 51270-30)
(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Andrew N. Spivak
Name of Person Signing

Andrew M. Spivak
Signature

11-22-04
Date

Total number of pages including cover sheet, attachments, and document: 25

Mail documents to be recorded with required cover sheet information to:
Commissioner of Patent & Trademarks, Box Assignments
Washington, D.C. 20231

11/24/2004 DBYRNE 00000167 031952 1067275
01 FC:8521 40.00 DA
02 FC:8522 2800.00 DA

va-85376

ANNEX H

TRADEMARK REGISTRATION

Serial Number	Registration Number	Mark Name	Live/Dead	Status	Registration Date	Estimated Expiration	Renewed Date	Owned By	Jurisdiction
76374641	2726681	APEX	LIVE	registered	6/17/2003	6/17/2013		HMI	US Federal
74185999	1702968	CADMAGIC	LIVE	registered	7/28/1992	7/28/2002	7/1/2002	HMI	US Federal
76047061		CIVILGEMS	DEAD	abandoned				HMI	US Federal
76372535		CIVILNEXUS	DEAD	abandoned				HMI	US Federal
76136104	2530792	CIVILQUIZ	LIVE	registered	1/15/2002	1/16/2012		HMI	US Federal
78341257		CIVILSTORM	LIVE	pending				HMI	US Federal
76264206	2607275	CLIENTCARE	LIVE	registered	8/13/2002	8/13/2012		HMI	US Federal
76047064		COGOGEMS	DEAD	abandoned				HMI	US Federal
78082429	2748745	CORPORATECARE	LIVE	registered	8/5/2003	8/5/2013		HMI	US Federal
74639186	1944336	CULVERTMASTER	LIVE	registered	12/26/1995	12/26/2005		HMI	US Federal
76088451	2568318	CURRENT METHODS	LIVE	registered	5/7/2002	5/7/2012		HMI	US Federal
74174999	1719945	CYBERNET	LIVE	registered	9/29/1992	9/29/2002	7/1/2002	HMI	US Federal
78081644	2733403	DARWIN	LIVE	registered	7/1/2003	7/1/2013		HMI	US Federal
76481630		DRAINAGEMASTER	LIVE	abandoned				HMI	US Federal
76416427		ENGINEERING WITHOUT BOUNDARIES	LIVE	abandoned				HMI	US Federal
78376092		FIRECAD	LIVE	pending				HMI	US Federal
78071313	2655082	FLEXTABLES	LIVE	registered	11/26/2002	11/26/2012		HMI	US Federal
76514313		FLEXUNIT PRO	LIVE	pending				HMI	US Federal
78071308	2675694	FLEXUNITS	LIVE	registered	1/14/2003	1/14/2013		HMI	US Federal
74163485	1698860	FLOWMASTER	LIVE	registered	7/7/1992	7/7/2002	7/1/2002	HMI	US Federal
76432431		GASGEMS	DEAD	abandoned				HMI	US Federal
76027961		GEM	LIVE	abandoned				HMI	US Federal
76046157		GEMS	LIVE	abandoned				HMI	US Federal
76027962		GES	LIVE	abandoned				HMI	US Federal
78277961		GISCONNECT	LIVE	pending				HMI	US Federal
76484180		GISTALK	LIVE	pending				HMI	US Federal
76087420	2467907	GRAPHICAL HEC-1	LIVE	registered	7/10/2001	7/11/2011		HMI	US Federal
76279548	2612383	HAESTAD METHODS	LIVE	registered	9/27/2002	9/27/2012		HMI	US Federal
76046010	2628943	HAESTAD METHODS	LIVE	registered	10/1/2002	10/1/2012		HMI	US Federal
76294961	2776360	HAESTAD METHODS A+ MODELER AUTHORIZED WATER PROVIDER AND DESIGN	LIVE	registered	10/21/2003			HMI	US Federal

Serial Number	Registration Number	Mark Name	Live/Dead	Status	Registration Date	Estimated Expiration	Renewed Date	Owned By	Jurisdiction
76294962	2776361	HAESTAD METHODS CERTIFIED AUTHORIZED WATER PROVIDER AND DESIGN	LIVE	registered	10/21/2003			HMI	US Federal
78098000		HAESTAD METHODS CLIENTCARE	DEAD	dead				HMI	US Federal
76295126	2776363	HAESTAD METHODS EXPERT MODELER AUTHORIZED WATER PROVIDER AND DESIGN	LIVE	registered	10/21/2003			HMI	US Federal
76529443		HAESTAD METHODS EZPAY	LIVE	pending				HMI	US Federal
76295127	2776364	HAESTAD METHODS MASTER MODELER AUTHORIZED WATER PROVIDER AND DESIGN	LIVE	registered	10/21/2003			HMI	US Federal
75599137	2306147	HAESTAD PRESS and Design	LIVE	registered	1/4/2000	1/4/2010		HMI	US Federal
76348996	2674556	HAESTAD PRESS	LIVE	registered	1/14/2003	1/14/2013		HMI	US Federal
75595144		HAESTAD PRESS and Design	DEAD	dead				HMI	US Federal
76373816	2677450	HAESTAD SEVERITY INDEX	LIVE	registered	1/21/2003	1/21/2013		HMI	US Federal
78272883		HAMMER	LIVE	pending				HMI	US Federal
76219738	2847967	HECGEMS	LIVE	registered	6/1/2004	6/1/2014		HMI	US Federal
76046009	2650131	HMI	LIVE	registered	11/12/2002	11/12/2012		HMI	US Federal
78097993		HMI CLIENTCARE	DEAD	abandoned				HMI	US Federal
76056337	2484874	JUMPSTART	LIVE	registered	9/4/2001	9/5/2011		HMI	US Federal
75632497	2832210	MERGEFAX	LIVE	registered	4/13/2004	4/13/2014		HMI	US Federal
76046155		MUNICIPALGEMS	LIVE	abandoned				HMI	US Federal
76432430		PETROGEMS	LIVE	registered	4/6/2004	4/6/2014		HMI	US Federal
76432429		PETROLGEMS	LIVE	abandoned				HMI	US Federal
76326409		PONDCAD	LIVE	abandoned				HMI	US Federal
76046160	2817748	PONDGEMS	LIVE	registered	2/24/2004	2/24/2014		HMI	US Federal
76326405		PONDGIS	LIVE	abandoned				HMI	US Federal
76046158	2568260	PONDMAKER	LIVE	registered	5/7/2002	5/7/2012		HMI	US Federal
75243956	2240149	PONDPACK	LIVE	registered	4/20/1999	4/20/2009		HMI	US Federal
76326726		PONDSAFE	LIVE	abandoned				HMI	US Federal
76326729		PONDSAGE	LIVE	abandoned				HMI	US Federal
76047066		PUMPGEMS	LIVE	pending				HMI	US Federal
76056338	2772042	PUMPMASTER	LIVE	registered	10/7/2003	10/7/2013		HMI	US Federal
78263577	2856034	PUMPMASTER and Design	LIVE	registered	6/22/2004	6/22/2014		HMI	US Federal
76372533		PUMPNEXUS	LIVE	abandoned				HMI	US Federal
78258979		PUMPTALK	LIVE	pending				HMI	US Federal
73810872		REAL LIFE	DEAD	dead				HMI	US Federal

Serial Number	Registration Number	Mark Name	Live/Dead	Status	Registration Date	Estimated Expiration	Renewed Date	Owned By	Jurisdiction
76270741		RIVERCAD	DEAD	dead				HMI	US Federal
76047062		ROADGEMS	DEAD	abandoned				HMI	US Federal
78415847		SCADACONNECT	LIVE	pending				HMI	US Federal
76412816		SEWERATLAS	LIVE	abandoned				HMI	US Federal
75059977	2306664	SEWERCAD	LIVE	registered	1/4/2000	1/4/2010		HMI	US Federal
74579929		SEWERCAD	DEAD	dead				HMI	US Federal
76492796		SEWERCAD	LIVE	pending				HMI	US Federal
76046159	2817747	SEWERGEMS	LIVE	registered				HMI	US Federal
76326406		SEWERGIS	LIVE	abandoned	2/24/2004	2/24/2014		HMI	US Federal
76163414		SEWERNET	LIVE	suspended				HMI	US Federal
76290056		SEWEROBJECTS	LIVE	abandoned				HMI	US Federal
76326403		SEWERSAFE	LIVE	abandoned				HMI	US Federal
76326728		SEWERSAGE	LIVE	abandoned				HMI	US Federal
78069315	2696713	SEWERTALK	LIVE	registered	3/11/2003	3/11/2013		HMI	US Federal
76224512		SITEGEMS	DEAD	abandoned				HMI	US Federal
76412343		SKELEBRATION	LIVE	abandoned				HMI	US Federal
76411274	2787373	SKELEBRATOR	LIVE	registered	11/25/2003			HMI	US Federal
74260391		SPELL and Design	DEAD	dead				HMI	US Federal
78376101		SPRINKLERCAD	LIVE	pending				HMI	US Federal
76412814		STORMATLAS	LIVE	abandoned				HMI	US Federal
74579928	1925227	STORMCAD	LIVE	registered	10/10/1995	10/10/2005		HMI	US Federal
76046156		STORMGEMS	LIVE	registered	2/24/2004	2/24/2014		HMI	US Federal
76326402		STORMGIS	LIVE	pending				HMI	US Federal
76163100		STORMNET	LIVE	abandoned				HMI	US Federal
76290057		STORMOBJECTS	LIVE	abandoned				HMI	US Federal
76326725		STORMSAFE	LIVE	abandoned				HMI	US Federal
76326408		STORMSAGE	LIVE	abandoned				HMI	US Federal
78069319	2744955	STORMTALK	LIVE	registered	7/29/2003	7/29/2013		HMI	US Federal
76072804		STREAMCAD	LIVE	abandoned				HMI	US Federal
76047067		STREAMGEMS	DEAD	abandoned				HMI	US Federal
76047063		SURVEYGEMS	DEAD	abandoned				HMI	US Federal
76290054		TRANSCAD	DEAD	dead				HMI	US Federal
76047065		TRANSGEMS	DEAD	abandoned				HMI	US Federal
78215269	2856958	UTALK	LIVE	registered	6/22/2004	6/22/2014		HMI	US Federal
76047573		UTILITYGEMS	DEAD	abandoned				HMI	US Federal
76224511		VIEWGEMS	LIVE	abandoned				HMI	US Federal
75243957		VISUAL HEC-1	DEAD	dead				HMI	US Federal

Serial Number	Registration Number	Mark Name	Live/Dead	Status	Registration Date	Estimated Expiration	Renewed Date	Owned By	Jurisdiction
75267276		VISUAL HEC-PACK	DEAD	dead				HMI	US Federal
76412815		WATERATLAS	LIVE	abandoned				HMI	US Federal
74639187	1944337	WATERCAD	LIVE	registered	12/26/1995	12/26/2005		HMI	US Federal
76046154	2713988	WATERGEMS	LIVE	registered	5/6/2003	5/6/2013		HMI	US Federal
76326407		WATERGIS	LIVE	abandoned				HMI	US Federal
76179132		WATERNET (stylized)	DEAD	dead				HMI	US Federal
76290055	2753907	WATEROBJECTS	LIVE	registered	8/19/2003	8/19/2013		HMI	US Federal
76529187	2855760	WATEROBJECTS	LIVE	registered	6/22/2004	6/22/2014		HMI	US Federal
76484595		WATERPROFTALK	LIVE	abandoned				HMI	US Federal
76326404	2807111	WATERSAFE	LIVE	registered	1/20/2004			HMI	US Federal
76326727		WATERSAGE	LIVE	abandoned				HMI	US Federal
78069317	2748701	WATERTALK	LIVE	registered	8/5/2003	8/5/2013		HMI	US Federal
76332831	2762513	WSS (stylized)	LIVE	registered	9/9/2003	9/9/2013		HMI	US Federal
76348875		WSSI	LIVE	abandoned				HMI	US Federal
76046008	2512030	WWW.HAESTAD.COM METHODS	LIVE	registered	11/27/2001	11/28/2011		HMI	US Federal

Rev. 7/14/04

JOINDER AND AMENDMENT AGREEMENT

JOINDER AND AMENDMENT AGREEMENT, dated as of October 29, 2004 (this "Joinder Agreement"), among HAESTAD METHODS, INC., a Connecticut corporation ("Haestad"), BENTLEY SYSTEMS, INCORPORATED, a Delaware corporation, as Borrower (the "Borrower"), the lenders listed on the signatory pages hereof (the "Lenders"), and WELLS FARGO FOOTHILL, INC., a California corporation, in its capacity as administrative agent (the "Agent").

WITNESSETH

WHEREAS, Borrower, the Lenders and Agent are parties to that certain Loan and Security Agreement, dated as of December 23, 2003 (as amended on October 29, 2004, and as it may be further amended, modified, supplemented or amended and restated from time to time, the "Loan Agreement"); and

WHEREAS, Borrower has purchased the Stock of Haestad pursuant to that certain Stock Purchase Agreement, dated as of July 30, 2004 (the "Purchase Agreement"), among Borrower, Haestad and John Haestad;

WHEREAS, in connection with the Purchase Agreement, Haestad became a wholly-owned subsidiary of Borrower; and

WHEREAS, the parties desire that, subject to the terms and conditions hereof, Haestad become a Guarantor and a party to certain of the Loan Documents;

NOW, THEREFORE, in consideration of the agreements and provisions herein contained, the parties hereto do hereby agree as follows:

Section 1. **Definitions**. Any capitalized terms used but not otherwise defined herein shall have the meanings ascribed to such terms in the Loan Agreement. To the extent such terms are not defined in the Loan Agreement, they shall have the meanings ascribed to such terms in the other Loan Documents, as applicable.

Section 2. **Joinders**. Subject to the satisfaction of the conditions set forth in Section 5, the parties agree that Haested shall become a party to the following documents (the "Joined Loan Documents") as follows:

2.01 **Guaranty**.

A. By execution of this Joinder Agreement, Haestad will become a party to the Guaranty, and Haestad will be deemed to be a "Guarantor" for all purposes under the Guaranty as of the Effective Date (as defined below).

B. As a Guarantor, Haestad assumes all the rights and obligations of a Guarantor jointly and severally with each other Guarantor as if originally named in the Guaranty.

C. As a Guarantor, Haestad is bound by the provisions of the Guaranty and shall perform in accordance with its terms all the obligations which by the terms of the Guaranty are required to be performed by it as a Borrower to the same extent as if originally a party thereto.

2.02 Guarantor Security Agreement.

A. By execution of this Joinder Agreement, Haestad will become a party to the Guarantor Security Agreement.

B. Haestad assumes all the rights and obligations of a Guarantor jointly and severally with each other Guarantors as if originally named in the Guarantor Security Agreement.

C. As a Guarantor, Haestad is bound by the provisions of the Guarantor Security Agreement and shall perform in accordance with its terms all the obligations which by the terms of the Guarantor Security Agreement are required to be performed by it as a Guarantor to the same extent as if originally a party thereto.

D. Haestad hereby, and by virtue of becoming a Guarantor under the Guarantor Security Agreement, grants to Agent, for the benefit of Agent and the Lenders, a continuing security interest in, lien on, assignment of and right of set-off against, its right, title and interest in all of its "Guarantor Collateral" (as defined in the Guarantor Security Agreement), as set forth in the granting clause of Section 2.1 of the Guarantor Security Agreement, whether now owned or existing or hereafter acquired, regardless of where located.

2.03 Intellectual Property Security Agreements.

A. By execution of this Joinder Agreement, Haestad will become a party to each of (i) the Patent Security Agreement, (ii) the Trademark Security Agreement, and (iii) the Copyright Security Agreement (each of the Patent Security Agreement, Trademark Security Agreement and Copyright Security Agreement is herein referred to as an "IP Security Agreement"), and Haestad will be deemed to be a "Grantor" for all purposes under each IP Security Agreement as of the Effective Date.

B. As a Grantor, Haestad assumes all the respective rights and obligations of a Grantor jointly and severally with each other Grantor in each IP Security Agreement as if originally named in such IP Security Agreement.

C. As a Grantor, Haestad is bound by the respective provisions of each IP Security Agreement and shall perform in accordance with its respective terms all the obligations which by the terms of such IP Security Agreement are required to be performed by it as a Grantor to the same extent as if originally a party thereto.

D. Haestad hereby, and by virtue of becoming a Grantor under the IP Security Agreements, assigns and pledges to Agent, for the benefit of the Lender Group, a security interest in all of Haestad's rights, title and interest in and to its "Copyright Collateral," "Patent Collateral," and "Trademark Collateral" (each as defined in the respective IP Security

Agreements) described in each of the granting clauses set forth in Section 1 of each IP Security Agreement, respectively.

2.04 **Pledge Agreement**.

A. By execution of this Joinder Agreement, Haestad will become a party to the Pledge Agreementt, and Haestad will be deemed to be a "Pledgor" for all purposes under the Pledge Agreement as of the Effective Date.

B. As a Pledgor, Haestad assumes all the rights and obligations of a Pledgor jointly and severally with each other Pledgor as if originally named in the Pledge Agreement.

C. As a Pledgor, Haestad is bound by the provisions of the Pledge Agreement and shall perform in accordance with its terms all the obligations which by the terms of the Pledge Agreement are required to be performed by it as a Pledgor to the same extent as if originally a party thereto.

D. Haestad hereby, and by virtue of becoming a Pledgor under the Pledge Agreement, transfers and grants to Agent, on behalf of the Lender Group, a senior, first priority Lien in all of its rights, title and interest in the "Collateral" (as defined in the Pledge Agreement), as set forth in the granting clause of Section 2 of the Pledge Agreement.

2.05 **Intercompany Subordination Agreement**.

A. By execution of this Joinder Agreement, Haestad will become a party to the Intercompany Subordination Agreement, and Haestad will be deemed to be a "Subordinating Creditor" for all purposes under the IC Subordination Agreement as of the Effective Date.

B. As a Subordinating Creditor, Haestad assumes all the rights and obligations of a Subordinating Creditor jointly and severally with each other Subordinating Creditor as if originally named in the IC Subordination Agreement.

C. As a Subordinating Creditor, Haestad is bound by the provisions of the IC Subordination Agreement and shall perform in accordance with its terms all the obligations which by the terms of the IC Subordination Agreement are required to be performed by it as a Subordinating Creditor to the same extent as if originally a party thereto.

Section 3. **Amendments**. Subject to the satisfaction of the conditions precedent set forth in Section 5 hereof, the parties hereby agree to the following amendments to certain Loan Documents.

3.01 **Schedule 5.5 to the Loan Agreement**. Schedule 5.5 to the Loan Agreement is hereby amended by adding the information set forth on Annex A hereto.

3.02 **Schedule 5.7(a) to the Loan Agreement**. Schedule 5.7(a) to the Loan Agreement is hereby amended by adding the information set forth on Annex B.

3.03 **Schedule 5.7(b) to the Loan Agreement**. Schedule 5.7(b) to the Loan Agreement is hereby amended by adding the information set forth on Annex C hereto.

3.04 **Schedule 5.7(c) to the Loan Agreement.** Schedule 5.7(c) to the Loan Agreement is hereby amended by adding the information set forth on Annex D.

3.05 **Schedule 5.10 to the Loan Agreement.** Schedule 5.10 to the Loan Agreement is hereby amended by adding the information set forth on Annex E.

3.06 **Schedule 1 to the Pledge Agreement.** Schedule 2 to the Pledge Agreement is hereby amended by adding the following to the end of the section captioned "Stock Owned and Pledge by Bentley Systems, Incorporated" on such schedule:

> "570 shares of the common stock, no par value, of Haestad Methods, Inc. (representing 100% of the total outstanding voting power of all classes of stock of Haestad Methods, Inc. entitled to vote)"

3.07 **Schedule I to the Copyright Security Agreement.** Schedule I to the Trademark Security Agreement is hereby amended by adding the information set forth on Annex F hereto with respect to Haestad.

3.08 **Schedule I to the Patent Security Agreement.** Schedule I to the Trademark Security Agreement is hereby amended by adding the information set forth on Annex G hereto with respect to Haestad.

3.09 **Schedule I to the Trademark Security Agreement.** Schedule I to the Trademark Security Agreement is hereby amended by adding the information set forth on Annex H hereto with respect to Haestad.

Section 4. Representations and Warranties. In order to induce Agent and Lenders to execute this Joinder Agreement, each of Haestad and Borrower hereby represents and warrants to Agent and each Lender that:

4.01 **Corporate Power, Etc.** Each of Haestad and Borrower (a) has all requisite corporate power and authority to execute and deliver this Joinder Agreement and to consummate the transactions contemplated hereby and (b) has taken all action, corporate or otherwise, necessary to authorize the execution and delivery of this Joinder Agreement and the consummation of the transactions contemplated hereby.

4.02 **Binding Effect.** This Joinder Agreement has been duly executed and delivered by Haestad and Borrower and this Joinder Agreement constitutes the legal, valid and binding obligations of each of Haestad and Borrower, enforceable against each of them in accordance with its terms, except as such enforceability may be limited by (a) applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws, now or hereafter in effect, relating to or affecting the enforcement of creditors' rights generally, and (b) the application of general principles of equity (regardless of whether such enforceability is considered in a proceeding in equity or at law).

4.03 **Noncontravention.** The execution, delivery and performance of this Joinder Agreement will not (a) violate any provision of federal, state, or local law or regulation applicable to Borrower or Haestad, the Governing Documents of Borrower or Haestad, or any order, judgment, or decree of any court or other Governmental Authority binding on Borrower or

Haestad, (b) conflict with, result in a breach of, or constitute (with due notice or lapse of time or both) a default under any material contractual obligation of Borrower or Haestad, (c) result in or require the creation or imposition of any Lien of any nature whatsoever upon any properties or assets of Borrower or Haestad, other than Permitted Liens, or (d) require any unobtained approval of Borrower's or Haestad's interestholders or any unobtained approval or consent of any Person under any material contractual obligation of Borrower or Haestad.

Section 5. **Conditions.** This Joinder Agreement shall be effective as of October 29, 2004 (the "Effective Date"), only upon the fulfillment in a manner satisfactory to Agent, of all of the following conditions in this Section 5:

5.01 **Execution of Joinder Agreement.** Haestad, Borrower, the Guarantor, Agent, and the Lenders shall have executed an original counterpart of this Joinder Agreement and shall have delivered (including by way of facsimile transmission) the same to Agent.

5.02 **Governing Documents**. Agent shall have received copies of Haestad's Governing Documents, as amended, modified, or supplemented to the Closing Date, certified by the Secretary of Haestad.

5.03 **Certificate of Status**. Agent shall have received certificates of status with respect to Haestad, dated within 10 days of the Effective Date, such certificate to be issued by the appropriate officer of the jurisdiction of organization of Haestad, which certificate shall indicate that Haestad is in good standing in such jurisdiction

5.04 **Incumbency Certificate**. Agent shall have received (a) a certificate of an officer of Haestad as to the incumbency and signatures of the officers of Haestad authorized to execute any document in connection with the transactions contemplated by this Joinder Agreement; and (b) copies of resolutions of the Board of Directors of Haestad, as provided by the organizational documents of Haestad, authorizing the execution, delivery and performance of this Joinder Agreement and the transactions contemplated hereby. Such certificate shall state that the resolutions set forth therein have not been amended, modified, revoked or rescinded as of the date of such certificate.

5.05 **Pledged Stock**. Borrower shall have delivered to Agent the certificates representing the shares of Haestad owned by Borrower, together with an undated stock power covering each such certificate, duly executed in blank.

Section 6. **Covenants**.

6.01 **Loan Document Obligations**. Haestad covenants that it will perform all covenants required to be performed by it as party to each of the Joined Loan Documents.

6.02 **Cleanup of Certain Intellectual Property** On or prior to the date that is thirty (30) days after the date hereof, Haestad shall have prepared and shall deliver, or cause to be delivered, to the U.S. Patent and Trademark Office and the U.S. Copyright Office, in good faith in accordance with the procedures and regulations of such office all documents, instruments or other information necessary for accurate and proper recordation of [TBD]. Following such delivery, Borrower shall promptly provide to Agent reasonable documentation of such delivery, including verification of receipt by the applicable entity.

6.03 **Further Assurances**. Haestad and Borrower shall execute and deliver, or cause to be executed and delivered, to Agent such documents and agreements, and shall take or cause to be taken such actions, as Agent may, from time to time, reasonably request to carry out the terms and conditions of this Joinder Agreement and the transactions contemplated hereby. Haestad hereby authorizes Agent to file, as agent for the Lenders, appropriate initial Uniform Commercial Code financing statements naming Haestad as debtor.

Section 7. **Miscellaneous**.

7.01 **Continuing Effect.** Except as specifically provided herein, the Loan Agreement and the other Loan Documents shall remain in full force and effect in accordance with their respective terms and are hereby ratified and confirmed in all respects.

7.02 **No Waiver.** This Joinder Agreement is limited as specified and shall not operate as a modification, acceptance or waiver of any provision of the Loan Agreement or any other Loan Document, except to the extent specifically set forth herein. Agent, on behalf of the Lenders, hereby reserves all of the rights and remedies of the Lenders arising as a result of any Default or Event of Default under the Loan Documents.

7.03 **Governing Law.** THIS JOINDER AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

7.04 **Counterparts.** This Joinder Agreement may be executed in any number of counterparts, each of which counterparts when executed and delivered shall be an original, but all of which shall together constitute one and the same instrument. A complete set of counterparts shall be lodged with the Administrative Borrower and Agent.

7.05 **Headings.** Section headings in this Joinder Agreement are included herein for convenience of reference only and shall not constitute a part of this Joinder Agreement for any other purpose.

7.06 **Binding Effect; Assignment.** This Joinder Agreement shall be binding upon and inure to the benefit of Haestad, Borrower, Agent, and the Lender, and their respective successors and assigns; provided, however, that the rights and obligations of Haestad and Borrower under this Joinder Agreement shall not be assigned or delegated without the prior written consent of Agent.

7.07 **Expenses.** Borrower agrees to pay Agent upon demand for all reasonable expenses, including reasonable fees of attorneys and paralegals for Agent incurred by Agent in connection with the preparation, negotiation and execution of this Joinder Agreement and any document required to be furnished herewith.

[Signature Pages Follow]

IN WITNESS WHEREOF, each of the undersigned has caused this Joinder Agreement to be executed and delivered by a duly authorized officer as of the date first above written.

JOINING GUARANTOR:

HAESTAD METHODS, INC.

By: _____
Name:
Title:

BORROWER:

BENTLEY SYSTEMS, INCORPORATED

By: _____
Name:
Title:

AGENT AND LENDER:

WELLS FARGO FOOTHILL, INC.

By: _____
Name:
Title:

IN WITNESS WHEREOF, each of the undersigned has caused this Joinder Agreement to be executed and delivered by a duly authorized officer as of the date first above written.

JOINING GUARANTOR:

HAESTAD METHODS, INC.

By: _____
Name:
Title:

BORROWER:

BENTLEY SYSTEMS, INCORPORATED

By: _____
Name:
Title:

AGENT AND LENDER:

WELLS FARGO FOOTHILL, INC.

By: _____
Name: Vincent J. Gori, Jr.
Title: Vice President

ANNEX A

Supplement to Schedule 5.5

14 Corporate Drive, Clifton Park, NY 12065

1129 Hospital Drive, Suite 6F, Stockbridge, GA 30281

1 Focus Plaza, Suite 200, 3360 Martin Farm Rd., Suwanee, GA 30024

9418 Brookline Avenue, Suite C, Baton Rouge, LA 70809

9668 Madison Blvd., Madison, AL 35758

37 Brookside Road, Waterbury CT 06708

ANNEX B

Supplement to Schedule 5.7(a)

Haestad Methods, Inc., a Connecticut corporation and wholly-owned subsidiary of Borrower

ANNEX C

Supplement to Schedule 5.7(b)

The chief executive office of Haestad Methods, Inc. is 685 Stockton Drive, Exton, Pennsylvania, 19341.

ANNEX D

Supplement to Schedule 5.7(c)

Haestad Methods, Inc.	06-1214452	CT 207185

ANNEX E

Supplement to Schedule 5.10

1. On December 12, 2002, Intergraph Corporation ("Intergraph") commenced a legal action in Alabama against Borrower seeking declaratory relief and an accounting of certain maintenance contract revenue in connection with the adjustment of the amount of the note issued pursuant to the asset purchase agreement dated December 26, 2000. After Intergraph filed its action, Borrower filed a counterclaim to recover damages resulting from Intergraph's breaches of its obligations under the asset purchase agreement. On May 11, 2004, the judge (i) denied Intergraph's claimed note adjustment and found the current outstanding balance of the note to be $6.7 million plus accrued interest, (ii) denied Borrower's counterclaims, and (iii) ordered each party to indemnify the other for its claimed costs. Borrower and Intergraph have filed appeals with the Alabama Supreme Court. Borrower is vigorously pursuing its appeal and the defense of Intergraph's appeal.

2. On September 9, 2002, Advantage Systems, Inc., a former authorized reseller of Borrower products and services, commenced an action against Borrower with the American Arbitration Association in Philadelphia, Pennsylvania. The action seeks monetary damages for breach of reseller contract, postal fraud, failure to negotiate in good faith, and wrongful termination. The arbitration hearing has been scheduled for March of 2005. Borrower is vigorously defending itself against this action.

3. On May 1, 2003, Third Millennium Technologies ("3MT") commenced an action against Borrower in the US District Court for the District of Kansas. This action sought to recover unspecified amount of monetary damages for breach of fiduciary duty, tortious interference, and fraudulent or negligent misrepresentation arising out of 3MT's relationship with Borrower under the Bentley Integrator documents. On June 24, 2003, Bentley filed a motion to compel arbitration. The US District Court for the District of Kansas granted Borrower's motion to compel arbitration on November 3, 2003. On January 14, 2004, 3MT filed a demand for arbitration with the American Arbitration Association in Philadelphia, Pennsylvania. The arbitration hearing has been scheduled for February of 2005. Borrower is vigorously defending itself against 3MT's demands.

ANNEX F

COPYRIGHT REGISTRATION

NAME	Material	TYPE	REGISTRATION #	YEAR WORK COMPLETED	DATE OF 1ST PUBLICATION	DATE OF REGISTRATION	DATE FILED	NAME OF FILER
Advanced Water Distribution Modeling and Management	Book	TX	TX 5-690-710	2003	1/15/2003	2/13/2003	2/8/2003	Chintana Ewing
AWWA Web Site	Web Site	TX	TXu 1-067-275	2001		1/3/2003	3/1/2002	Jeff Cohen, Esq.
Christmas Greeting Card (1996)	Card	VA	VA 945-915	1998	12/1/1996	10/7/1998	10/1/1998	Jeff Cohen, Esq.
Christmas Greeting Card (1997)	Card	VA	VA 945-914	1997	12/1/1997	10/7/1998	10/1/1998	Jeff Cohen, Esq.
Civil Projects Web Site	Web Site	TX	TXu 1-098-878	2001		3/13/2002	2/28/2002	Jeff Cohen, Esq.
Civil Quiz Web Site	Web Site	TX	TXu 1-098-880	2001		3/13/2002	2/28/2002	Jeff Cohen, Esq.
CivilStorm 2005	Software/Manual	TX		2004	7/2/2004		9/23/2004	Steve Porzio
Computer Applications in Hydraulic Engineering, Third Edition	Book	TX	TX 5-162-472	1999	10/5/1999	7/5/2000	6/30/2000	Chintana Ewing
CulvertMaster for Windows 3.0	Software/Manual	TX	Txu 1 154 657	2003	6//2003	7/10/2003		Chintana Ewing
CulvertMaster Project	Software	TX	TX 5 036 494	1995	11/1/1995	11/23/1998		
Current Methods	Magazine	TX	TX 5-423-169	2001	9/17/2001	10/4/2001	10/2/2001	Chintana Ewing
Cybernet for Windows 3.1	Software	TX	TX 4 895 017	1998	3/25/1998	11/23/1998		Chintana Ewing
Essential Hydraulics and Hydrology	Book	TX	TX 5-°143-405	1998	11/23/1998	7/5/2000	6/30/2000	Chintana Ewing
FlexUnits Version 2.0	Software/Manual	TX	TX 5-835-892	2003	8/14/2003	11/26/2003	11/17/2003	Steve Porzio
Floodplain Modeling Using HEC-RAS	Book	TX		2003	10/14/2003		11/17/2003	Steve Porzio
FlowMaster 2005	Software/Manual	TX		2004	2/28/2004		9/23/2004	Steve Porzio
FlowMaster For Windows Version 7	Software/Manual	TX	TXu 1-113-555	2003		7/10/2003	6/30/2003	Steve Porzio
FlowMaster PE for Windows 6.0	Software	TX	TX 4 895 015	1998	6/27/1998	11/23/1998		Chintana Ewing
GISConnect for AutoCAD Version 1.0	Software/Manual	TX	TX 5-839-234	2003	9/18/2003	11/21/2003	11/17/2003	Steve Porzio
GISConnect for AutoCAD Version 2.0	Software/Manual	TX		2004	9/1/2004		9/23/2004	Steve Porzio
Graphical HEC-1 Version 1.0	Software	TX	TX 4 895 019	1998	2/9/1998	11/23/1998		Chintana Ewing
Haestad Methods AWWA Website	Web Site	TX		1998				not yet filed
Haestad Methods Civil Campus Website	Web Site	TX		2002				not yet filed
Haestad Methods Civil Projects Website	Web Site	TX	TXu 1-093-835	1997		1/23/2003	1/15/2003	Chintana Ewing
Haestad Methods Civil Quiz Website	Web Site	TX	TXu 1-093-836	2003		1/23/2003	1/15/2003	Chintana Ewing
Haestad Methods Severity Index Website	Web Site	TX	TXu 1-093-834	1999	10/1/1999	1/23/2003	1/15/2003	Chintana Ewing
Haestad Methods Virtual Tour	Software	PA		2003	5/20/2003		3/30/2004	Steve Porzio
Haestad Methods Water Security Website	Web Site	TX	TXu 1-093-837	2003		1/23/2003	1/15/2003	Chintana Ewing
Haestad Methods WaterObjects Website	Web Site	TX		2002				not yet filed
Haestad Methods Website	Web Site	TX	TXu 1-015-640	2001		9/18/2001	9/13/2001	Jeff Cohen, Esq.
HAMMER for Windows Version 1.0	Software/Manual	TX	TX 5 897 734	2003	9/10/2003	11/21/2003	11/17/2003	Steve Porzio

NAME	Material	TYPE	REGISTRATION #	YEAR WORK COMPLETED	DATE OF 1ST PUBLICATION	DATE OF REGISTRATION	DATE FILED	NAME OF FILER
Hydraulics and Hydrology: Practical Guide	Software	TX	TX 4 506 288	1997	5/8/1997	7/10/1997		Chintana Ewing
PondPack for Windows Version 7.0	Software/Manual	TX	TX 5-245-157	1999	5/10/1999	8/9/2000	8/3/2000	Chintana Ewing
PondPack for Windows Version 8.0	Software/Manual	TX	TX 5-820-813	2002	10/2/2002	11/25/2002	11/18/2002	Chintana Ewing
PondPack for Windows Version 9	Software/Manual	TX	TXu 1-141-754	2003		8/15/2003	8/11/2003	Chintana Ewing
PondPack Version 6.1	Software/Manual	TX	TX 4-895-020	1998	8/1/1998	11/23/1998	11/19/1998	Jeff Smith, Esq.
PumpMaster for Windows Version 1.0	Software/Manual	TX	TX 5-784-197	2003	7/17/2003	7/30/2003	7/25/2003	Steve Porzio
PumpMaster.com Website	Web Site	TX	TX 5-809-099	2003	7/7/2003	7/30/2003	7/25/2003	Chintana Ewing
SCADAConnect for Windows 1.0	Software/Manual	TX	TX 5-926-771	2003	11/6/2003	4/22/2004	3/30/2004	Steve Porzio
Severity Index Web Site	Web Site	TX	TXu 1-098-881	2001		3/13/2002	2/28/2002	Jeff Cohen, Esq.
SewerCAD Version 4.1	Software/Manual	TX	TX 5-245-158	2000	5/23/2000	8/10/2000	8/8/2000	Chintana Ewing
SewerCAD Version 5.5	Software/Manual	TX	TXu 1 154 656	2003	6//2003	7/10/2003		Chintana Ewing
StormCAD for Windows Version 5.5	Software/Manual	TX	TXu 1-113-542	2003		7/10/2003	6/30/2003	Steve Porzio
StormCAD Version 4.1	Software/Manual	TX	TX 5-245-155	2000	5/23/2000	8/10/2000	8/8/2000	Chintana Ewing
Stormwater Conveyance Modeling and Design	Book	TX		2003	8/28/2003		9/18/2003	Steve Porzio
Water Distribution Modeling, First Edition	Book	TX	TX 5-340-954	2001	4/3/2001	4/27/2001	4/23/2001	Chintana Ewing
Water Security Summit Proceedings	Audio Visual Work	PA	PA 1-105-860	2002	3/15/2002	7/12/2002	7/12/2002	Chintana Ewing

ANNEX G

PATENT STATUS

Client Matter #	Filing Date	Examination Expected	Inventors	Title	Application Number	Description
107051-0001C1	November 14, 2001 Provisional January 17, 2002 Utility Patent	November 1, 2004	Zheng Y. Wu, Thomas M. Walski, Robert A. Gumieri, Gregg A. Herrin, & Robert F. Mankowski	Method and System for Automatic Water Distribution Model Calibration	10/051,820	The disadvantages of prior techniques have been overcome by the present invention, which provides an automatic water distribution model calibration process that has improved accuracy and efficiency. Multiple parameters and corresponding boundary conditions are taken into account to provide an accurate representation of the network at an instant in time. The inventive system includes a software program that contains three integral parts: a genetic algorithm module, a hydraulic simulation module and a calibration module. These modules interact to provide an optimized calibration solution.More specifically, the invention includes a method of automatically calibrating a water distribution model that involves a user selecting multiple calibration parameters.
107051-0002U	March 7, 2002 Provisional March 4, 2003 Utility Patent	September 2005 to March 2006	Zheng Y. Wu, Thomas M. Walski, Gregg A. Herrin, Robert F. Mankowski, Wayne R. Hartell, Jonathan DeCarlo & Benjamin D. Wilson	Method for Optimal Design and Rehabilitation of Water Distribution Systems	10/379,353 60/363,121	Darwin Designer provides an integrated decision-making support tool. It offers modelers the best than ever optimization software of rich functionality and great flexibility. Using Darwin Designer, a water engineer is able to design a water distribution system for practicat conditions to achieve the goal of the maximum cost efficiency and benefit. It handles single and/or multiple objectives for the design and rehabilitation. The optimization model can be established to include the combination and aggregation of sizing new pipes and rehabilitating old pipes, multiple demand loading conditions and various boundary system conditions. This will enable a modeler to optimize either an entire water system or a portion of the system with the minimum cost and maximum benefit. The cost effective design and/or rehabilitation solution is determined by the least cost, the maximum benefit or the trade-off between the cost and benefit. Darwin Designer provides an engineer with three different optimization levels. A user is able to select any one of three optimization models to best suit his project needs.
107051-0003	March 22, 2002	September 2004 to March 2005	Ezio Todini, Michael E. Tryby, Jack S. Cook, Thomas M. Walski, & Robert F. Mankowski	Automatic Parameter Estimation Extension for Variable Speed Pumps	10/104,714	The invention extends the capabilities of a public domain hydraulic network solver in 3 important ways; 1) Estimates the relative speed factor for a variable speed pump drive sufficient to maintain a fixed pressure at a control node (junction, reservoir, or tank) in the network; 2) Estimates the relative speed factor for a variable speed pump drive sufficient to maintain a fixed flow through the pump subject to varying suction side and discharge side pressures; and 3) Fully integrates variable speed pump operation with the status and control capabilities of the hydraulic network solver.
107051-0004	June 12, 2002	December 2004 to July 2005	Gregg A. Herrin & Benjamin D. Wilson	Method and System for Providing an Energy Cost Estimation for a Water Distribution Network	10/170,253	The invention provides a way for engineers to estimate the energy costs associated with storage that occurs within a water distribution network. Pumps push water from areas of low hydraulic grade to areas of higher hydraulic grade, and use energy in the process. This energy has an associated cost. Traditional methods of estimating energy costs are based strictly on pump usage, which does not account for changes in system storage, which do heve a significant impact on the overall energy usage and cost of maintaining the system. The invention estimates the financial impact (additive or subtractive) that results from tanks filling or draining during the period of hydraulic analysis, thus arriving at a more accurate long-term estimate of energy cost.
107051-0006	January 3, 2003	July 2005 to January 2006	Ming Jin, Jack S. Cook, Jr., Sammy R. Coran, & Danny L. Fread	Method and System for Developing a Numerical Dynamic Sanitary Sewer and Storm Water Drainage Simulation Model	10/336,473	It is a highly efficient, very robust, widely applicable computer numerical model, which is based on an implicit finite difference scheme to get simultaneously numerical solutions of one-dimensional hydrodynamic equations (Saint-Venant equations). The model is applicable to simulate steady and unsteady flows in sanitary sewer system, storm water drainage system, detention pond system, and open channel system. These simulations can be used in the engineering design, water management, water resources research, etc. The model contains algorithms/codes to greatly increase the computational efficiency and robustness to simulate complicated network of pipe/channel system with any combinations of complicated flows, such as subcritical/supercritical mixed flows, gravity, pressure and street flooded flows. These new algorithms include relaxation technique and LPI technique.
107051-0007	January 8, 2003	July 2005 to January 2006	Ming Jin, Jack S. Cook, Jr., Sammy R. Coran, John A. Roulier, & Mike K. Glazner	Universal Hydraulics Solver (Part 1)	10/338,230	The disadvantages of prior techniques are overcome by the present invention which is a software program embodying a method and system for provding hydraulic response curves for a complex hydraulic network system that includes transitional flows and structures that are not otherwise readily described by convention modeling techniques, but which can be readily and accurately described using the techniques of the present invention. More specifically, in accordance with the method of the present invention, first a set of hydraulic delivery curves is developed using typical numerical techniques. A hydraulic structure whose operation can be represented by a single-valued rating curve around a fixed, downstream boundary is described using a conventional technique. Then any curve overlap, or curve crossover is detected. Once detected, the next step of the method of the present invention performs a removal of curve overlap occuring at the ends of the curves, and then provides a technique for removal of curve overlap along the interior sections of the curve
107051-0008	January 10, 2003 Provisional May 19, 2003 Utility Patent	October 2005 to May 2006	Robert A. Gumieri & Robert F. Mankowski	Method of Detecting Potential Topology Problems in a Network	10/336,473 60/439,285	This invention is used to locate two types of potential topology problems within a network: *Vertices in close proximity* - Vertices in close proximity to any other vertex are flagged as potential problems, because in some cases all incoming edges should be connected to a single vertex. *Pipe split candidates* - Vertices in close proximity to an edge (pipe) are flagged, because in some cases it may visually appear that an edge is connected to a vertex, when in fact it is not. We construct a Quadtree representation of the network to optimally perform these "nearest neighbor" searches.

Client Matter #	Filing Date	Examination Expected	Inventors	Title	Application Number	Description
107051-0009	May 14, 2002	October 2004 to May 2005	Jack S. Cook, Jr., Scott P. Devoe, Sasa Tomic, and Benjamin D. Wilson	Method and System for the Storage and Use of Engineering Modeling Alternatives With Unitized Data	10/145,841	The invention provides the way for a modeling application to manage unitized data in a database without assumption about the units the data is stored in. The invention provides the mapping between working units, display units, storage units. Working units represent the units an application needs to use the data in. Display units are the units a client desires to see the data in. Storage units are the units used to store the data in the database. For example the application might think of pipe lengths in miles, the user might desire to see them in kilometers, while the database might store it in meters. The invention allows the users to define each set of units for different attributes. An attribute is user defined dimension. An example of an attribute would be pipe length. The user can define multiple attributes for the same physical dimension. Pipe length and pipe diameter can be separate attributes even though they belong to the same dimension of length. This allows the client to see pipe lengths in different units than diameters, e.g. lengths in miles and diameters in inches. The invention also the user to create new dimensions, attributes, and units. It provides the
107051-0011	July 8, 2002	January 2005 to July 2005	Wayne R. Hartell, Jack S. Cook, Jr., Robert F., Mankowski, Gregg A. Herrin, Zheng Y. Wu	Method and System for Reduction of a Network Topology-Based System Having Automated Calibration Features	10/190,651	The disadvantages of prior techniques have been overcome by the present invention, which provides an automatic model reduction and skeletonization process that maintains system integrity through consistent network topology and equivalent pipe techniques and includes user-specified criteria and tolerances to allow customization of the skeletonization process by the user. The reduction in the number of elements utilized by the model is performed using multiple skeletonization techniques and particularly, data scrubbing which is enhanced by a network integrity preservation algorithm that includes a loop sensitivity heuristic that can be user-defined. The data scrubbing process also includes a genetic algorithm-based calibration program that is run to re-instate the network behavior and to optimize that behavior, such as the hydraulics, to the reduced model. The user has the capability of setting criteria and tolerances for the skeletonization techniques, and for identifying certain elements as "non-removable." The calibration includes multiple parameters and corresponding boundary conditions that are taken into account to provide an accurate representation of the
107051-0012	June 13, 2002 Provisional June 9, 2003 Utility Patent	November 2005 to June 2006	Zheng Y. Wu, Jack S. Cook,Jr., Robert F. Mankowski, and Gregg A. Herrin	Technique for Optimization of a Simplified Network Model	10/457,120 60/388,391	The disadvantages of prior techniques have been overcome by the solutions of the present invention in which a method and system for optimization of a simplified engineering model is provided. The invention provides a software tool for efficiently simplifying an engineering model such as a water distribution system and for preserving the hydraulic accuracy of the simplified model. More specifically, in the water distribution network environment, the hydraulic network simplification includes a method and system for optimization of a simplified engineering model. The invention provides a software tool for efficiently simplifying an engineering model such as a water distribution system and for preserving the hydraulic accuracy of the simplified model. The system includes a software program that employs a genetic algorithm to evolve solutions for reinstating the behavior of the original network into a simplified network. The genetic algorithm can be used for identifying the less sensitive hydraulic elements (links and nodes), and removing them or replacing them with the best-fit element parameters produced by the genetic algorithm module of the present inven
107051-0014	January 8, 2003	July 2005 to January 2006	Ming Jin, Jack S. Cook,Jr., Samuel R. Coran, John A. Roulier, and Michael K. Glazner	Universal Hydraulics Solver (Part 2)	10/338,216	The disadvantages of prior techniques are overcome by the present invention which is a software program embodying a method and system for providing hydraulic surface representations of flow data for complex hydraulic network systems that include transitional flows and structures that are not otherwise readily described by conventional modeling techniques, but which can be readily and accurately described using the techniques of the present invention. More specifically, in accordance with one aspect of the invention, a triangulated surface interpolation of the data, which maintains the monotonicity of the surface and allows a quick evaluation of flow value at any point in the system is provided. In addition, a mathematical response patch surface using special smoothing and regression techniques is provided that enforces monotonic characteristics. As used herein, "monotonic" shall mean that the first derivatives are either increasing or decreasing over the full solution domain.
107051-0015	Jcoo to review draft. Other inventors made edits to the draft	TBD after filing	Jack S. Cook, Diego Alexander Diaz Pabon, Annaleis Hogan, Benjamin J. Ewing	PumpMaster	TBD	The disadvantages of prior techniques are overcome by the present invention, which provides a method and system for an integrated Internet-based solution that is industry specific and provides a unified collection of searchable information and a collaborative communications environment for members within the industry, with the invention being embodied in a software program and associated Internet tool comprising a web portal. The software program and web portal which is a robust web site that provides a variety of services, access an associated database that contains information about products, including manufacturers catalogs, and other information for the relevant industry involved in the specific application of the invention. Using the software program and the web portal of the present invention, a user can construct a query to search the database for products that meet that user's unique design criteria. The query can be submitted under a unique key or user name, that maintains the user's identity as confidential. Query results are returned that provide the best-fit solutions for the user's proposed design. These query results are also made available on a web page targeted for manufacturers and suppliers in the industry whose products are featured on the web

Rev 7/14/04