

## PCT Recordation of Search History

Case/PCT Application Number: PCT/US18/21614

CLIN Number/Technical Field of PCT Application: 002 / Life Sciences

Dates During Which the Search was Conducted: 25 April 2018 – 1 May 2018

Date of Completion of Recordation of Search History Form: 1 May 2018

Research Analyst Initials: KMB

Search Approval Official (SAO) Initials: JMP

### Field of Search/Classification Information:

IPC(8) Classifications: A61B 6/00, 34/10; G06T 7/00, 7/55, 17/00 (2018.01)

CPC Classifications: A61B 6/466, 6/504, 2034/105, 34/10; G06T 7/187, 7/55, 2207/30101, 2207/30172, 2210/41, 11/003, 17/00, 17/005, 17/05

### Databases Searched (Patent and Non-Patent Literature (NPL), Including Sub-Databases and Files Searched) and Search Terms Used:

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); Orbit; PATFT; PubMed; IEEE; EBSCO; Google/Google Scholar;

KEYWORDS: vascular, artery, vessel, vein, reconstruction, model, surface, heart, computer, segment, portion, 2D, two dimensional, angiogram, X-ray, 3D, three dimensional, anchoring, reference

## Database Search String Recordation, Including Dates of Searches:

## Patent Database Search Strategy/Results:

## PatSeer

| ID  | Search String   | Records | Created Date |
|-----|---|---------|--------------|
| L20 | TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (segment* OR portion) AND (model* OR represent*) W10 (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) WS (3_D* OR three_dimension*)  | 1494    | 27-Apr-18    |
| L19 | L10 AND TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (segment* OR portion) AND (model* OR represent*) W10 (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) WS (3_D* OR three_dimension*)                                  | 667     | 27-Apr-18    |
| L18 | L10 AND TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (segment* OR portion) W10 (referenc*) AND (model* OR represent*) W10 (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) WS (3_D* OR three_dimension*)                  | 46      | 27-Apr-18    |
| L17 | L10 AND TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (segment* OR portion) W10 (referenc*) AND (model* OR represent*) W10 (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*) W10 (referenc*) | 27      | 27-Apr-18    |
| L16 | TACD: (vascular* OR arter* OR vessel OR vein) AND (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (segment* OR portion) W10 (referenc*) AND (model* OR represent*) AND (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*) W10 (referenc*)         | 4132    | 27-Apr-18    |
| L15 | TACD: (vascular* OR arter* OR vessel OR vein) AND (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (segment* OR portion) W10 (referenc* OR anchor*) AND (model* OR represent*)  | 25236   | 27-Apr-18    |

|     |  |        |           |
|-----|--|--------|-----------|
|     | AND (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)  |        |           |
| L14 | L10 AND TACD: (vascular* OR arter* OR vessel OR vein) AND (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (segment* OR portion) W10 (referenc* OR anchor*) AND (model* OR represent*) AND (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*) | 1428   | 27-Apr-18 |
| L13 | L10 AND TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (segment* OR portion) W10 (referenc* OR anchor*) AND (model* OR represent*) W10 (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*) | 56     | 27-Apr-18 |
| L12 | L10 AND TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (referenc* OR anchor*) AND (model* OR represent*) W10 (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)                           | 434    | 26-Apr-18 |
| L11 | TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (referenc* OR anchor*) AND (model* OR represent*) W10 (surfac* OR anatom* OR heart) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)                                   | 2305   | 26-Apr-18 |
| L10 | CPC: (A61B6/466 OR A61B6/504 OR A61B2034/105 OR A61B34/10 OR G06T7/187 OR G06T7/55 OR G06T2207/30101 OR G06T2207/30172 OR G06T2210/41 OR G06T11/003 OR G06T17/00 OR G06T17/005 OR G06T17/05) OR IC: (A61B6/00 OR A61B34/10 OR G06T7/00 OR G06T7/55 OR G06T17/00)   | 147873 | 26-Apr-18 |
| L9  | TA: ((vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*)) AND TACD: (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (surface W10 model*) AND (segment*) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)   | 169    | 26-Apr-18 |
| L8  | TA: ((vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*)) AND TACD: (comput* OR   | 27     | 26-Apr-18 |

|    |   |    |           |
|----|---|----|-----------|
|    | circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (referenc*) AND (anchor*) AND (segment*) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)  |    |           |
| L7 | TA: ((vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*)) AND TACD: (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (referenc*) AND (anchor*) W10 (segment*) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*) | 4  | 26-Apr-18 |
| L6 | TACD: (vascular* OR arter* OR vessel OR vein) W10 (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) W10 (referenc*) AND (anchor*) W10 (segment*) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)       | 40 | 25-Apr-18 |
| L5 | TAC: (vascular* OR arter* OR vessel OR vein) AND (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (referenc*) AND (anchor*) AND (segment*) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)        | 70 | 25-Apr-18 |
| L4 | TA: (vascular* OR arter* OR vessel OR vein) AND (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (referenc*) AND (anchor*) AND (segment*) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)         | 0  | 25-Apr-18 |
| L3 | TA: (vascular* OR arter* OR vessel OR vein) AND (reconstruct* OR model*) AND (comput* OR circuit* OR process*) AND (vascular* OR vessel* OR arter* OR vein*) AND (segment*) AND (2_D* OR two_dimension* OR angiogra* OR x_ray) AND (3_D* OR three_dimension*)                                       | 25 | 25-Apr-18 |
| L2 | INV: (HARISH W3 Omri) OR (SHILON W3 Ofek) OR (LAVI W3 Guy)  | 21 | 25-Apr-18 |
| L1 | AASN: CathWorks   | 7  | 25-Apr-18 |

### PATFT (27 April 2018)

- CPC/G06T\$ AND SPEC/vascular\$
- CPC/G06T\$ AND SPEC/vascular\$ AND surface AND model\$

- CPC/G06T\$ AND SPEC/vascular\$ AND referenc\$

**IEEE (1 May 2018)**

- 2D 3D vascular tree anchor
- two dimensional three dimensional vascular reconstruction surface model reference segments
- 2D projection image vascular reconstruction 3-D positions
- 2D image 3D vascular reconstruction reference segments anchoring segments

**Non-Patent Literature (NPL) Search Strategy/Results:**

**Google/Google Scholar (26 April 2018):**

- vascular tree reconstruction 2-D projection images 3-D
- vascular tree reconstruction 2D image vascular segments 3D positions
- vascular modeling 2D reference segments 3D surface model

**PubMed (26 April 2018):**

- vascular tree reconstruction 2D image 3D positions
- vascular tree angiogram 3D surface model
- artery reconstruction 2D projection image 3D

**EBSCO (26 April 2018):**

- vascular tree reconstruct\* 2D imag\* 3D position\*
- vascular reconstruction surface anatomical\* model\* 3D
- blood vessel reconstruction reference vascular segments