

O uso da informação tecnológica contida nos documentos de patente

O papel estratégico do INPI

Instituto Nacional da Propriedade Industrial - INPI

Sérgio Barcelos Theotonio



FIESP - SP

07 de maio de 2012

Evolução da tecnologia

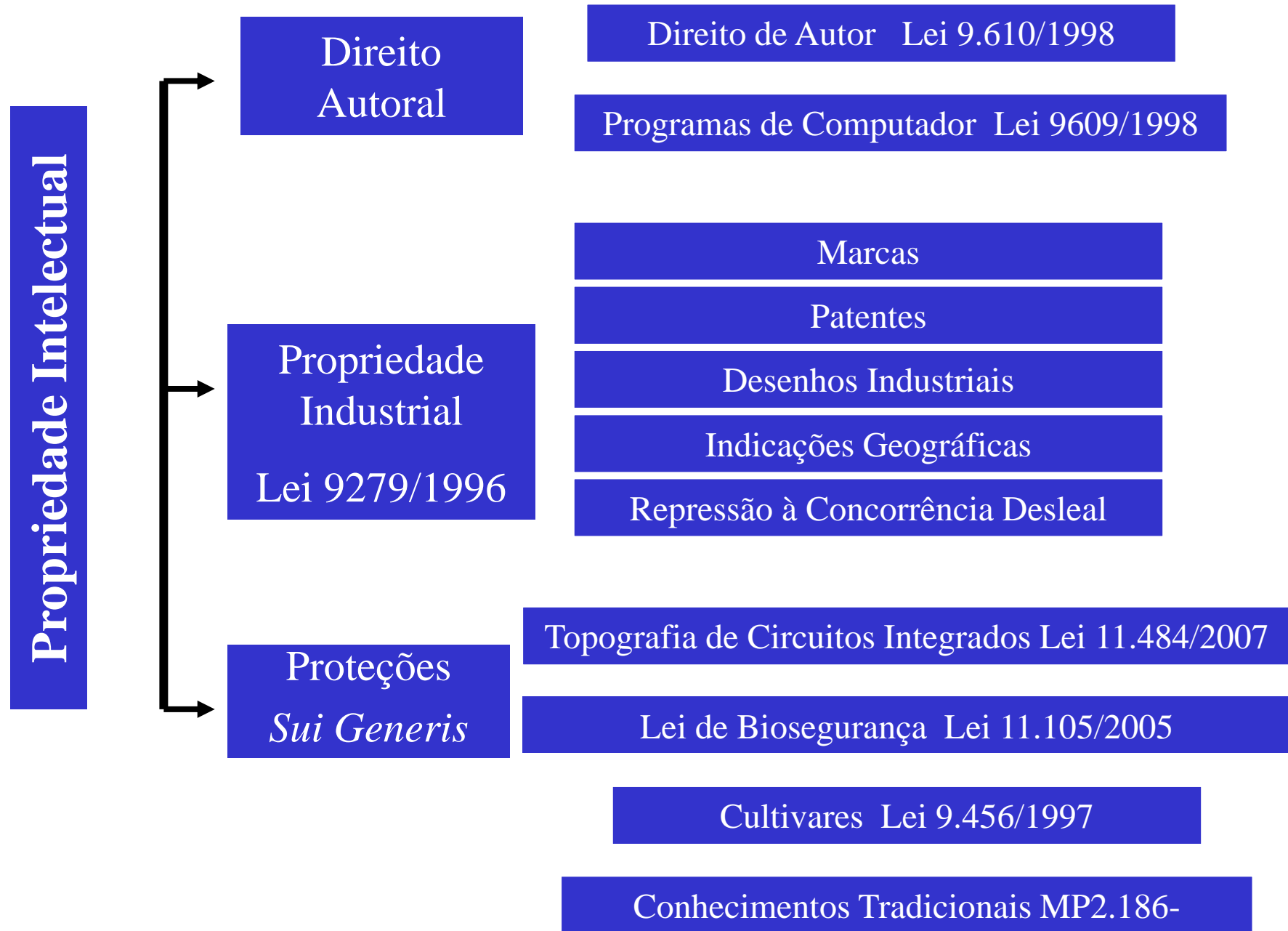
HDD do computador IBM Ramac 350, em 1956, pesando 1 tonelada, com capacidade de **5 MB**; ou seja nossa pequena PEN drive atual com seus **8 GB** possui capacidade 1600 vezes maior do que o seu “ancestral”.



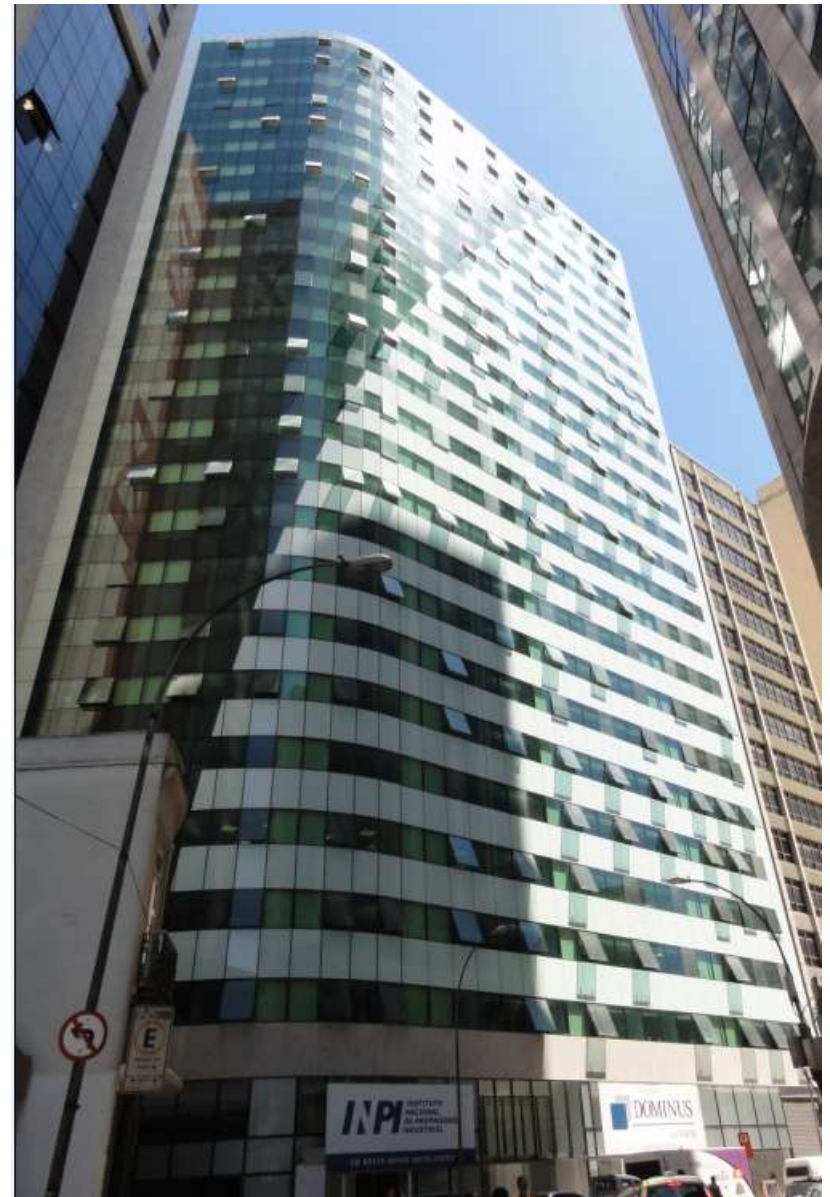
Propriedade Intelectual e Inovação



Modalidades de Direitos de Propriedade Intelectual



INPI HEADQUARTERS – RIO DE JANEIRO – BRAZIL





Instituto Nacional da Propriedade Industrial

INPI

Principais atividades :

- **Concessão de Patentes;**
- **Registro de Desenhos Industriais**
- **Registro de Marcas;**
- **Registo de Indicações Geográficas.**
- **Averbação de Contratos de Transferência de Tecnologia.**
- **Registro de Programas de Computador;**

Disseminação da Propriedade Intelectual

O INPI tem continuamente ampliado suas ações de disseminação da Propriedade Intelectual no país.

Até o final de 2010, foram treinados quase 6.000 profissionais compreendendo gestores e técnicos em:

- Universidades,
- Institutos de Pesquisas,
- Secretarias de Ciência e Tecnologia e
- Instituições de suporte às pequenas e médias empresas.
- Associações

Academia da Propriedade Intelectual, Inovação e Desenvolvimento

Criada em 2007 com o objetivo de consolidar as atividades de ensino e pesquisa da Propriedade Intelectual, atuando através de:

- Cursos de curta duração
- Ensino à distância
- Mestrado Profissional em Propriedade Intelectual e inovação, sendo o primeiro curso “*stricto sensu*” no assunto no país.

O curso recebe alunos de diferentes áreas do conhecimento (advogados, engenheiros, administradores, etc). A sexta turma de alunos teve início em 2012.



Academia da Propriedade Intelectual, Inovação e Desenvolvimento

Atuando como centro de excelência na educação e pesquisa em PI e Inovação, o curso de mestrado profissional objetiva:

- Pesquisar os temas relativos à Propriedade Intelectual;**
- Promover cursos de capacitação em PI.**

Metas alcançadas:

- 05 turmas concluídas (2007 a 2011)**
- 117 Alunos regulares**
- 137 Alunos ouvintes**
- 48 Dissertações de mestrado concluídas**



OBSERVATÓRIO TECNOLÓGICO DO INPI - OBTEC

I – Função:

Realizar monitoramentos setoriais do desenvolvimento tecnológico mundial, levantando dados e formatando informações a partir do acesso a bases de dados de documentação patentária e de informação tecnológica em geral.

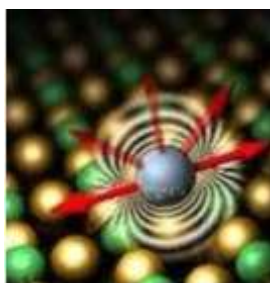
II – Objetivo Geral:

Constituir um ambiente para a interação direta entre o INPI e os diversos agentes do Sistema Nacional de Inovação, através da elaboração de metodologias, construção de indicadores e melhor percepção das particularidades dos setores econômicos estudados, dentre aos quais, encontra-se a Defesa.

Disseminação da Informação Tecnológica

O INPI PUBLICA ESTUDOS E ALERTAS TECNOLÓGICOS, TAIS COMO:

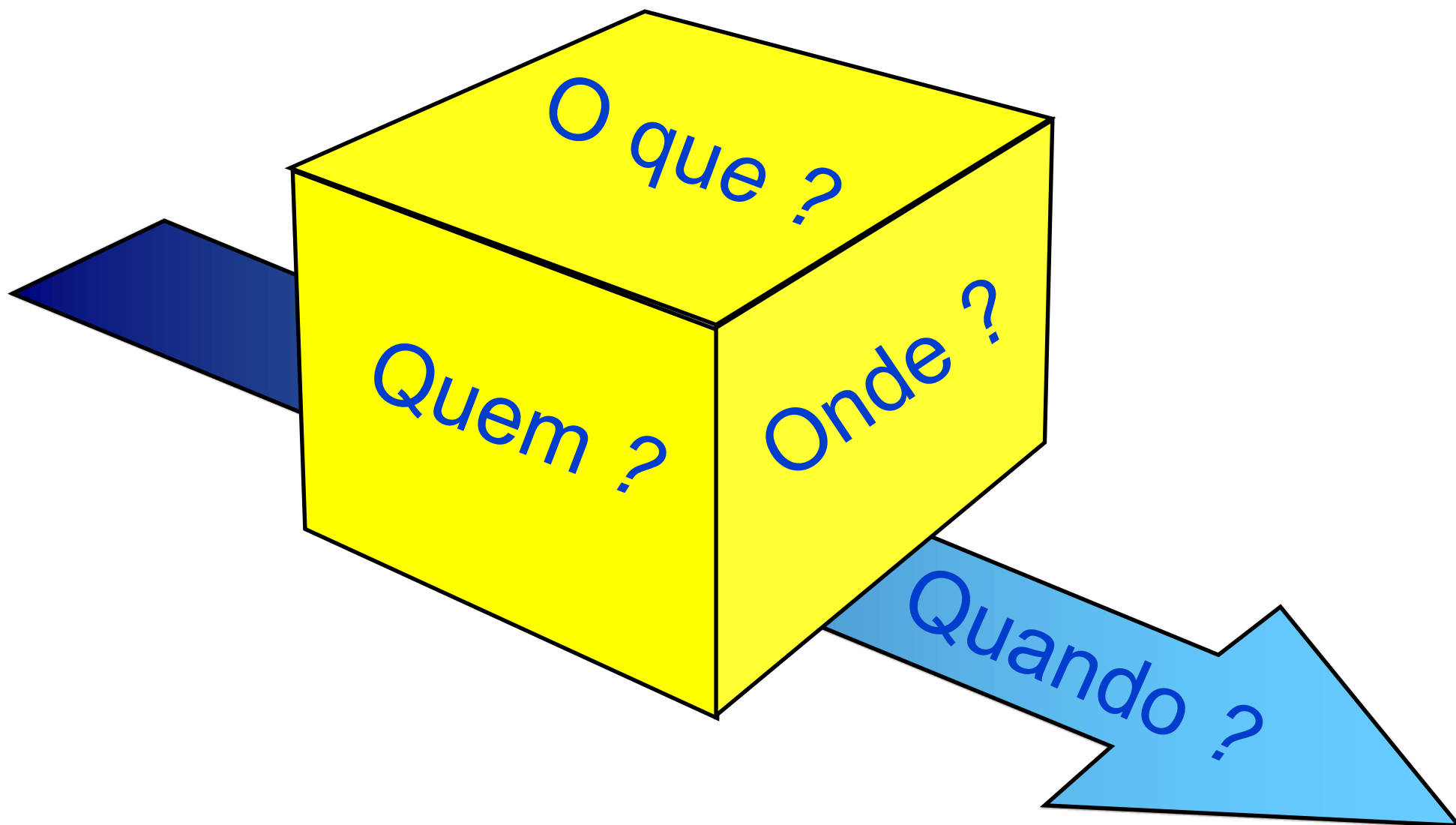
- Células Tronco,
- Biodiesel,
- Energia Eólica,
- Energia Solar,
- Energia Nuclear
- Células a Combustível
- Nanotecnologia
- Nanobiotecnologia
- Melhoria das Deficiências Pessoais



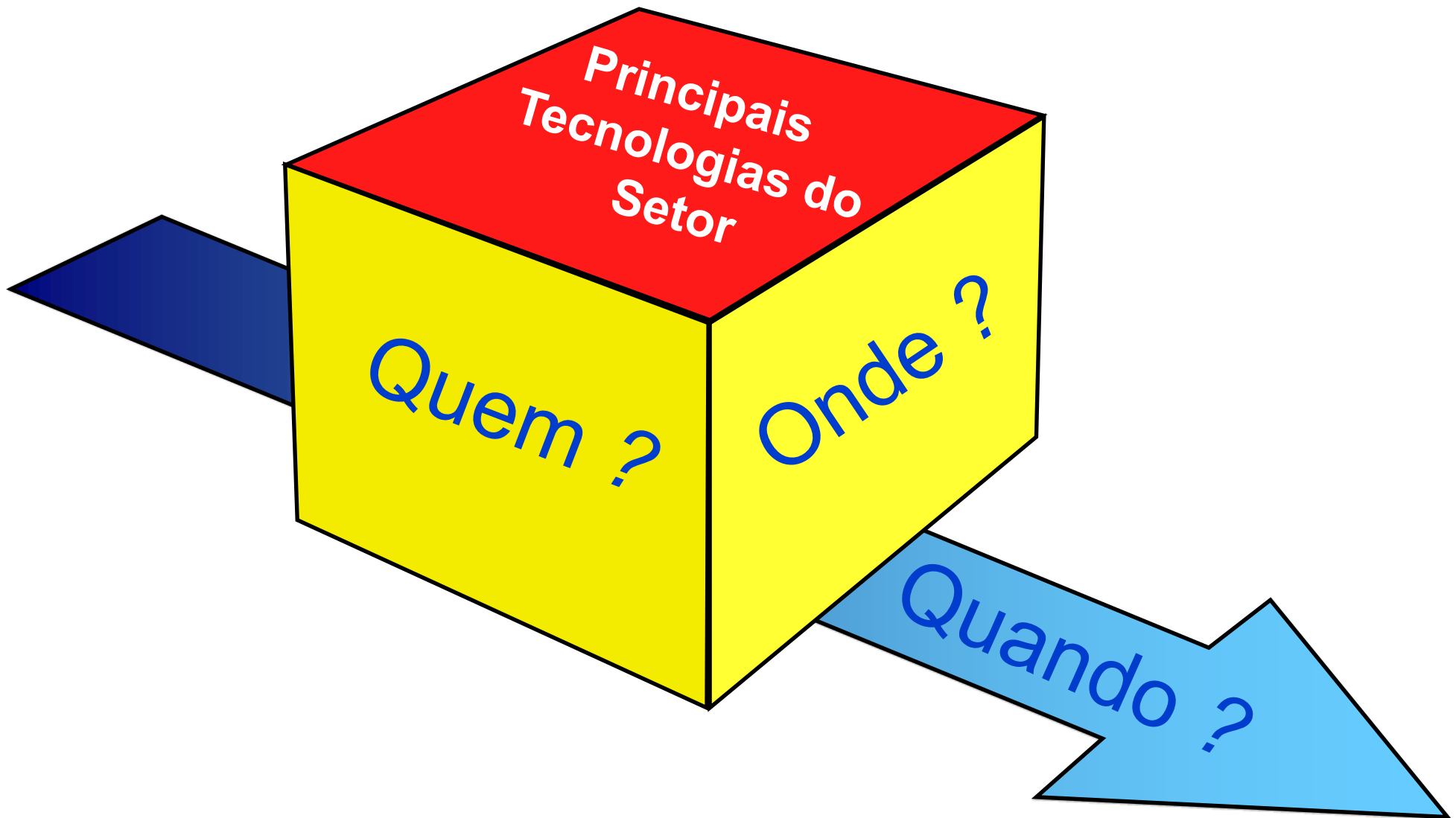
INFORMAÇÃO TECNOLÓGICA INPI

- Acervo principal : 26 milhões de documentos de patentes.
- **Base EPOQUE - 100 MILHÕES DE DOCUMENTOS.**
- Incremento mensal : 40 mil novos documentos.
- Origem : principais países desenvolvidos.
- Conteúdo : Descrição técnica detalhada.
- Apresentação : Estrutura básica em padrão universal.
- Acervo em : papel, microfilmes, CD-ROM e DVD.
- Recuperação de dados : rápida e detalhada em qualquer área técnica.

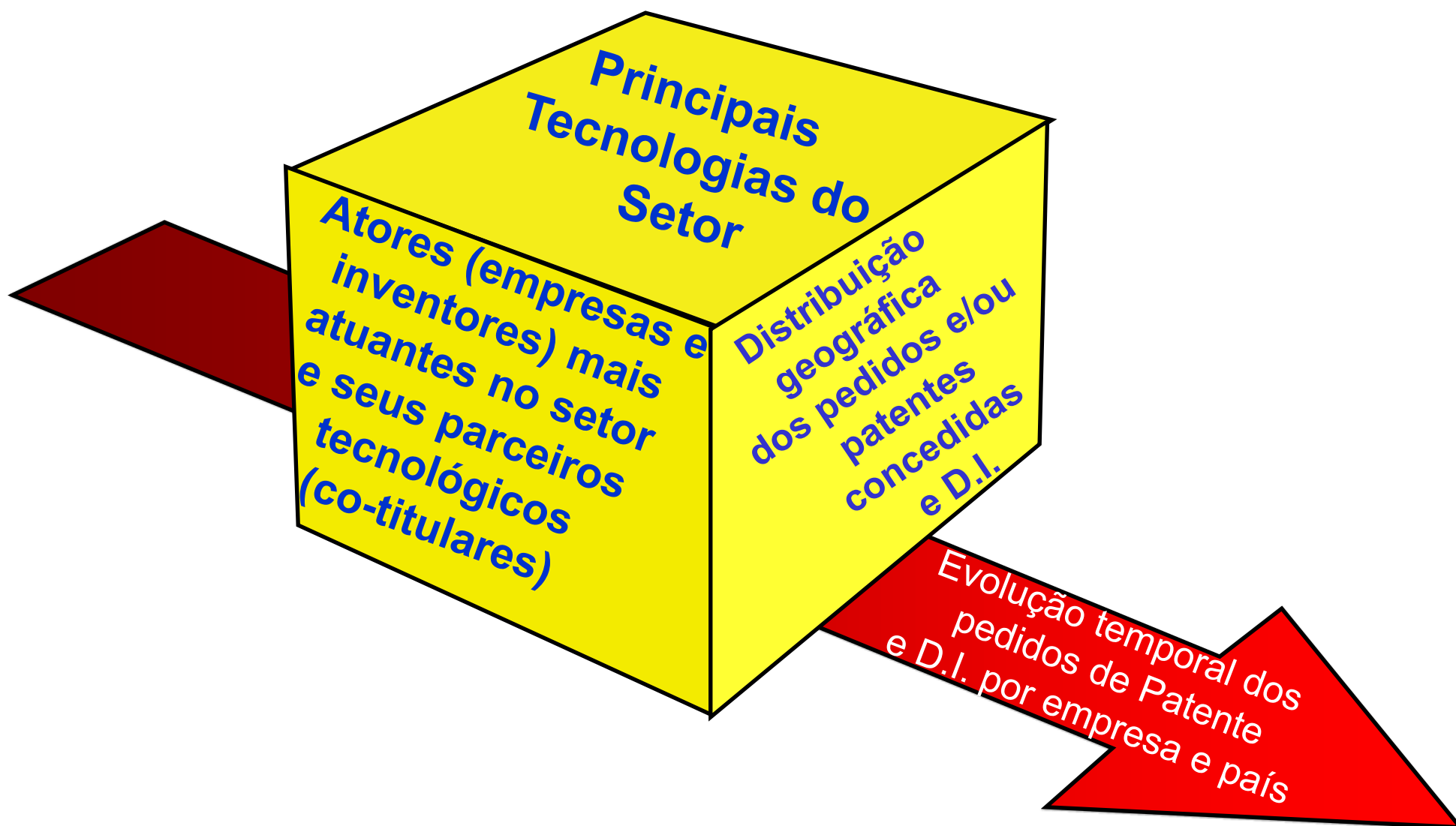
Principais Indicadores Levantados em Bases de Patentes

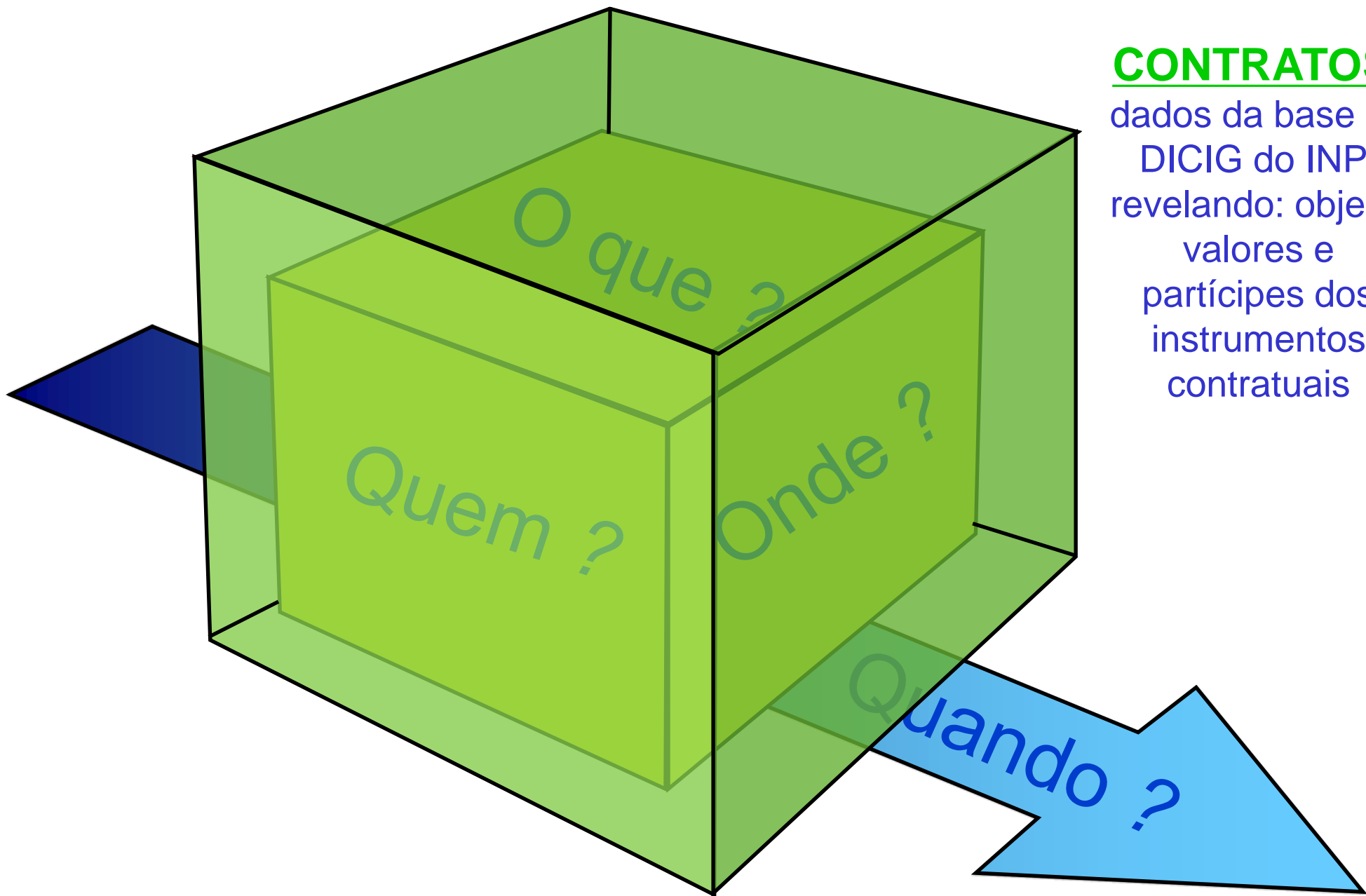


Principais Indicadores Levantados em Bases de Patentes

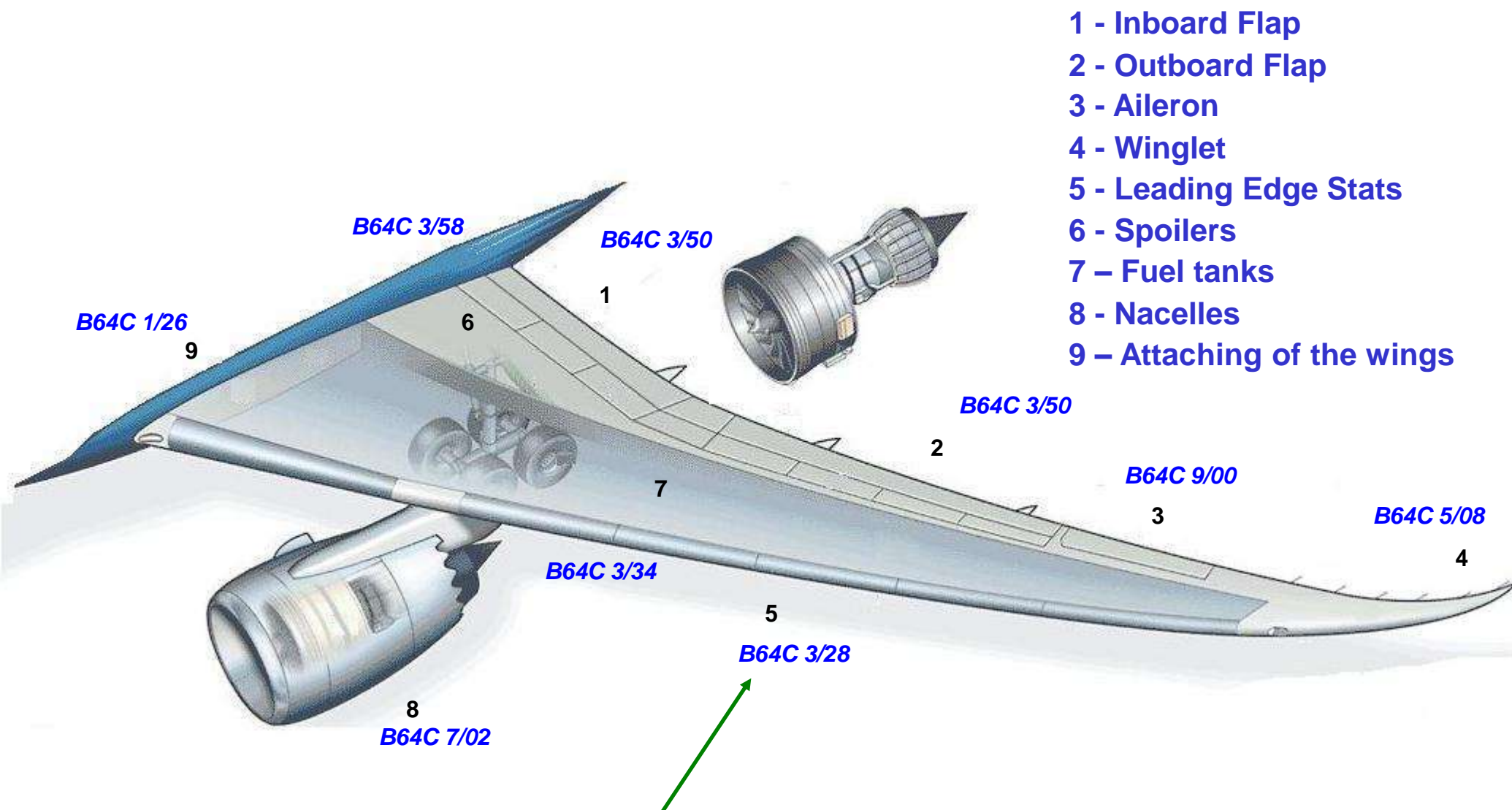


Principais Indicadores Levantados em Bases de Patentes





Case: Composite materials in aircraft wings



International Patent Classification (IPC) codes

Exemplos de Classificações de Materiais Compósitos e Processos de Fabricação

B29C 70/00 - Modelagem de materiais compostos.

B29C 70/08 - Reforços fibrosos.

B29C 70/44 - Utilizando pressão isostática.

B29C 70/46 - Utilizando moldes nivelados, (**PREPREGS**).

B29C 70/48 - Moldagem por transferência de resina (**RTM**).

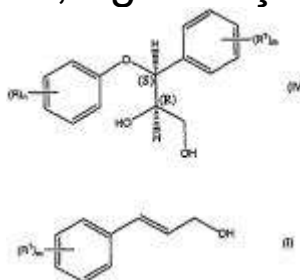
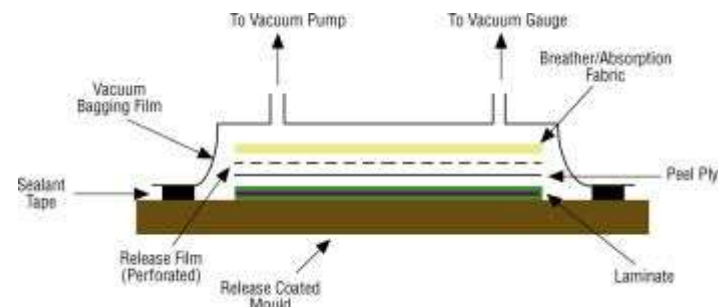
B32B 27/00 - Produtos em camadas, resina sintética.

B32B 27/02 - na forma de fibras ou filamentos.

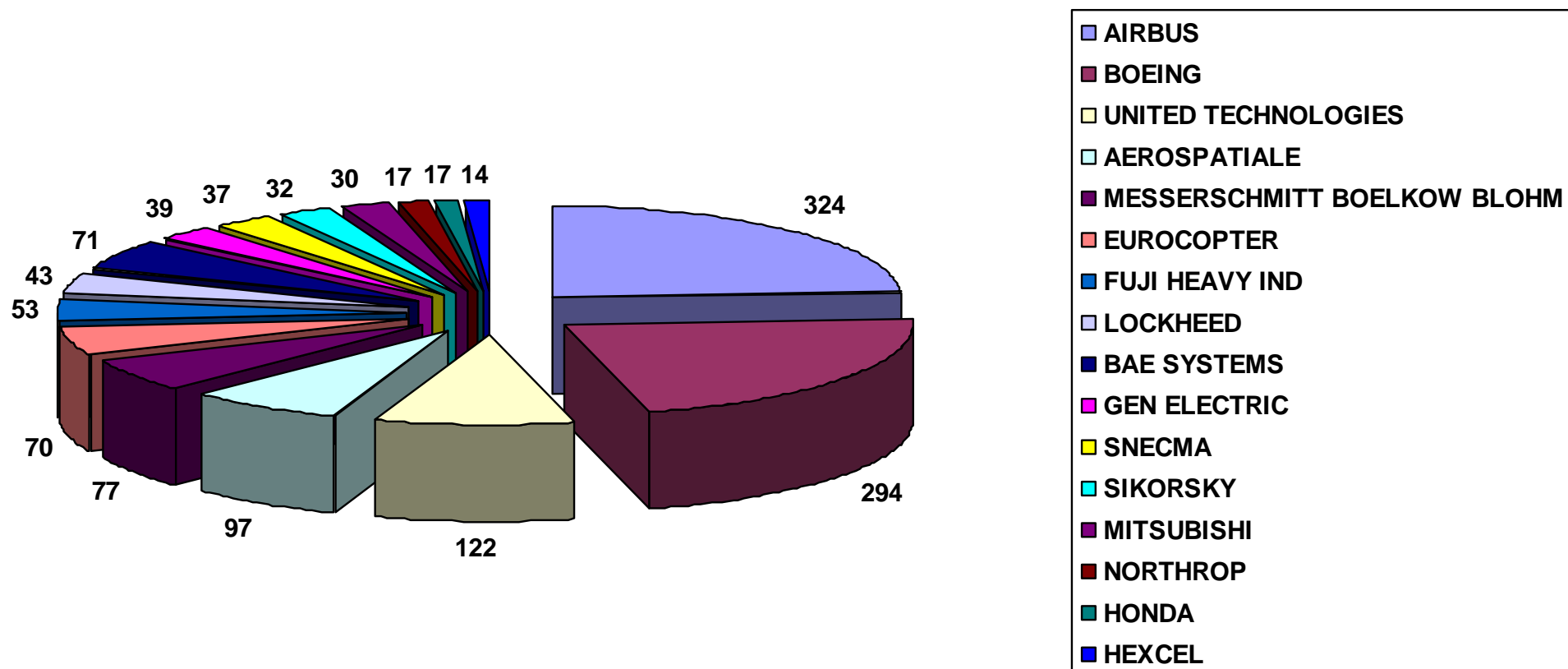
B32B 27/04 - como substância de impregnação, aglutinação ou incrustação.

C08J 05/24 - aspectos químicos

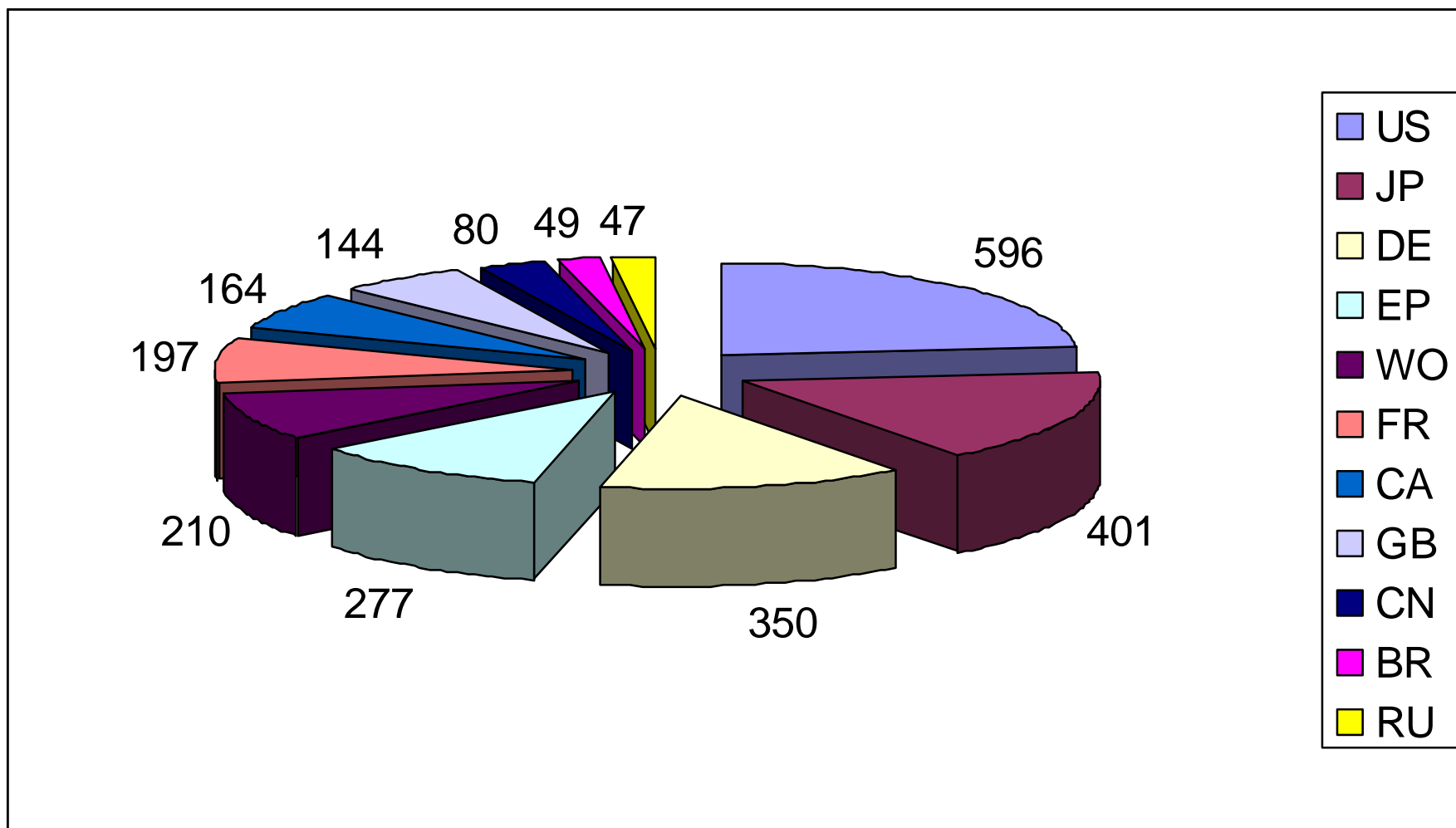
C08L 63/00 - aspectos químicos



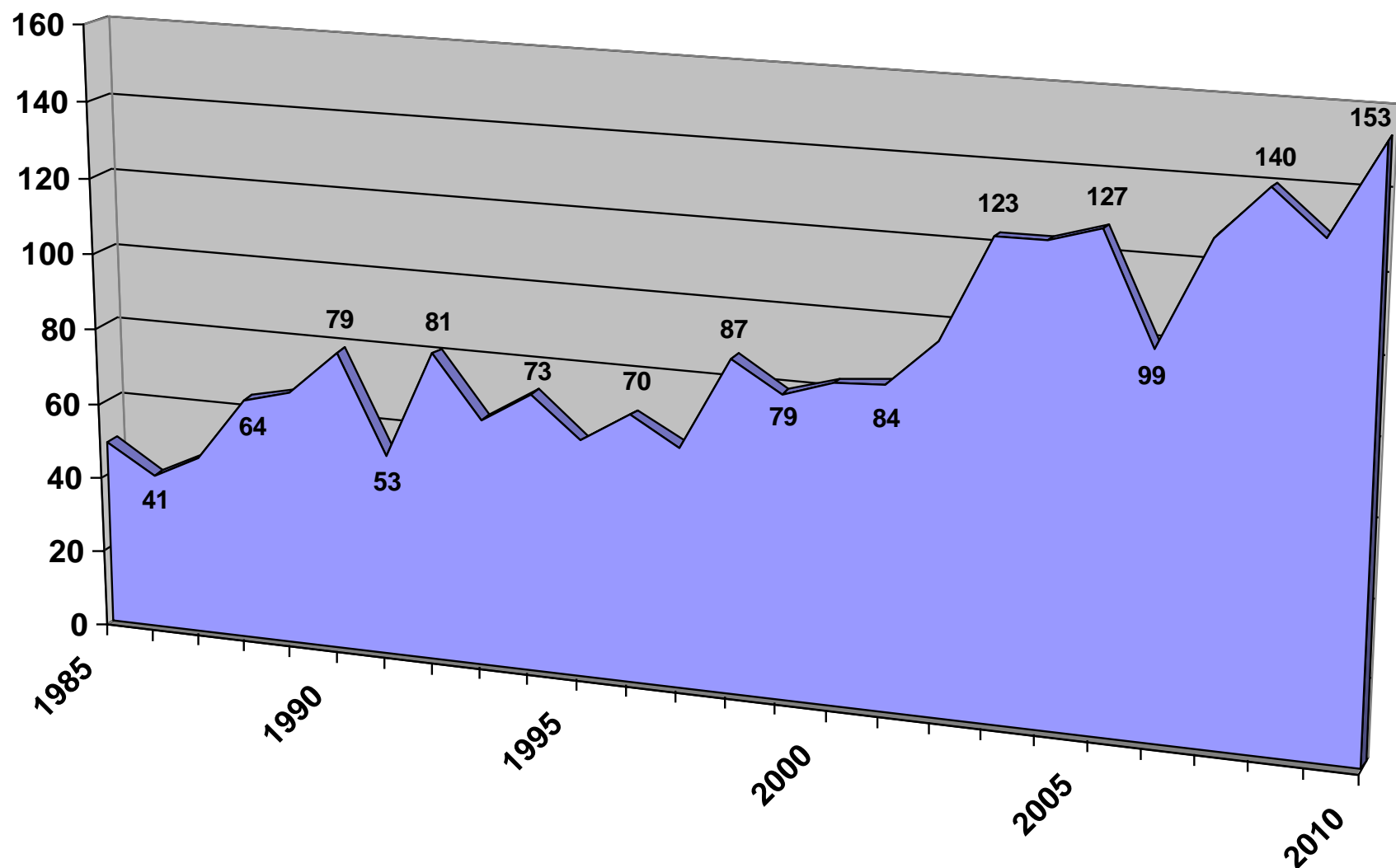
Principais Depositantes dos Pedidos de Patentes de Compósitos em Asas 1985 A 2010



Distribuição Geográfica dos Pedidos de Patentes de Compósitos em Asas 1985 A 2010



Evolução Temporal dos Pedidos de Patentes de Compósitos em Asas



Informações Contidas no Sistema de Patentes permitem: (enfoque tecnológico)

- Mapear a evolução de tecnologias ao longo do tempo;
- Mapear a evolução dos depósitos por países ou por empresa;
- Identificar as tecnologias emergentes;
- Identificar o início da tecnologia (*patente fundamental*) e sua evolução;
- Rastrear competências tecnológicas (*core business*);
- Quem são os principais inventores e quais pesquisam os mesmos temas;
- Avaliar o grau de difusão de uma tecnologia através das citações.



US005306327A

United States Patent [19]

Dingeman et al.

[11] Patent Number: 5,306,327

[45] Date of Patent: Apr. 26, 1994

[54] MODIFIED NATIVE STARCH BASE BINDER FOR PELLETIZING MINERAL MATERIAL

[75] Inventors: David L. Dingeman, Duluth; William E. Skagerberg, Cloquet, both of Minn.

[73] Assignee: Orix Technologies, Inc., Duluth, Minn.

[21] Appl. No.: 852,269

[22] PCT Filed: Sep. 26, 1990

[86] PCT No.: PCT/US90/05466

§ 371 Date: May 19, 1992

§ 102(e) Date: May 19, 1992

[51] Int. Cl.³ C22B 1/08

[52] U.S. Cl. 75/313; 75/303; 75/321; 75/772

[58] Field of Search 75/772, 321, 303, 313

[56]

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Primary Examiner—Peter D. Rosenberg

Attorney, Agent, or Firm—Merchant, Gould, Smith, Edell, Welter & Schmidt

[57]

ABSTRACT

A binder for pelletizing particulate mineral material. The binder including about 30–99.5% modified native starch, and about 0.2–80% of water-dispersible polymer material selected from the group consisting of water-dispersible natural gums, water-dispersible pectins, water-dispersible starch derivatives, water-dispersible cellulose derivatives, water-dispersible vinyl polymers, water-dispersible acrylic polymers and mixtures thereof. Alternate embodiments include from about 0.5–50% lignosulfonates and/or about 0.2–40% soda ash. Mineral ore concentrate is also disclosed as are mineral ore and iron ore pellets. In addition, methods of binding particulate mineral material and of making mineral ore pellets are also disclosed.

(54) **LEAKAGE DETECTION AND FLUID LEVEL PROGNOSTICS FOR AIRCRAFT HYDRAULIC SYSTEMS**

(75) Inventor: **Wlamir Olivares Loesch Vianna**, Sao Bernardo do Campo (BR)

(73) Assignee: **Embraer Empresa Brasileira De Aeronautica S.A.**, Sao Jose Dos Campos SP (BR)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **12/182,754**

(22) Filed: **Jul. 30, 2008**

(65) **Prior Publication Data**
US 2010/0030496 A1 Feb. 4, 2010

(51) **Int. Cl.**
G01F 23/00 (2006.01)
G01M 15/00 (2006.01)

(52) **U.S. Cl.** **702/51; 702/50; 702/113; 702/114; 73/40; 73/592**

(58) **Field of Classification Search** **702/50-51, 702/55, 113, 114; 73/40, 592**
See application file for complete search history.

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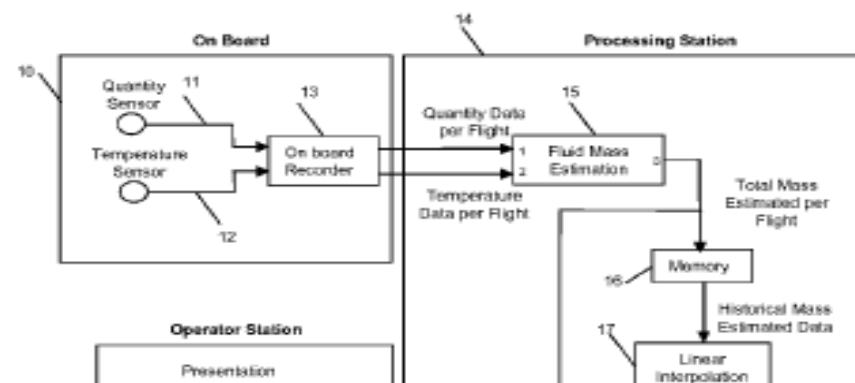
Primary Examiner — Sujoy K Kundu

(74) *Attorney, Agent, or Firm* — Nixon & Vanderhye PC

(57) **ABSTRACT**

A method for detecting and predicting total hydraulic fluid level for aircraft hydraulic systems includes determining an estimated value for a parameter indicative of total fluid level or mass. Each new value is combined with an historical indication (e.g., from previous flights) to provide a prediction for the future value of total quantity indication. With the same combination, one can provide an estimated value for total system leakage or level loss. An alert can be generated if hydraulic fluid level or mass is predicted to fall below a predetermined level.

14 Claims, 5 Drawing Sheets



**EMPREGO**

Propriedade intelectual gera 40 milhões de empregos nos Estados Unidos, diz estudo

Estúdios de cinema norte-americanos, produtores de medicamentos e outras empresas que dependem de direitos autorais comportam 40 milhões de empregos. Esse número representa 28% da força de trabalho dos EUA, segundo um relatório divulgado ontem. Quase 35% do PIB americano ou mais de US\$ 5 trilhões derivam de 75 mercados fortemente dependentes de propriedade intelectual. **Reuters**



Informações Contidas no Sistema de Patentes permitem: (enfoque mercadológico)

- Identificar os atores no mercado e também os novos entrantes;
- Identificar potenciais rotas para aperfeiçoamentos em produtos e processos existentes;
- Monitorar concorrentes em um determinado setor;
- Identificar mudanças na estratégia de pesquisa e desenvolvimento (P&D);
- Quais são os países onde existe proteção (visão de mercado);
- Antecipar movimentos de empresas e/ou países.

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US as the publication number AND F41 as the IPC classification
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ARMAS

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☐ 1. Launcher for tube cleaning projectiles

★ Inventor: FRANZINO JOSEPH J [US] CRUZ GEORGE M [US]	Applicant: GOODWAY TECHNOLOGIES CORP [US]	EC:	IPC: B08B9/053 F41 B11/00	Publication info: US 8146193 (B1) 2012-04-03	Priority date: 2010-11-29
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☐ 2. DISPENSING DEVICE FOR INFRARED SPECIAL MATERIAL

★ Inventor: BRUM ROGER D [US] IMHOOF MARK A [US]	Applicant:	EC:	IPC: B64D7/00 F41 H11/02 F42B12/70	Publication info: US 2012074163 (A1) 2012-03-29	Priority date: 2009-02-09
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☐ 3. VEHICLE HAVING ARTICULATED STEERING, IN PARTICULAR ARMORED VEHICLE

★ Inventor: SKOFF GERHARD [AT]	Applicant:	EC:	IPC: B62D13/00 F41 H7/02	Publication info: US 2012073896 (A1) 2012-03-29	Priority date: 2009-03-26
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Fonte: Espacenet

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**MUNIÇÕES E
DETONAÇÃO**

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☐ 1. Broadhead

★ Inventor: WEAVER ZACHARY T [US]	Applicant: WEAVER S OUTDOOR INC [US]	EC:	IPC: <u>F42</u> B6/08	Publication info: <u>US</u> 8147361 (B1) 2012-04-03	Priority date: 2010-12-29
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☐ 2. Supercavitating projectile having a morphable nose

★ Inventor: FU JYUN-HORNG [US]	Applicant: LOCKHEED CORP [US]	EC:	IPC: <u>F42</u> B15/22	Publication info: <u>US</u> 8146501 (B1) 2012-04-03	Priority date: 2008-03-03
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☐ 3. DISPENSING DEVICE FOR INFRARED SPECIAL MATERIAL

★ Inventor: BRUM ROGER D [US] IMHOOF MARK A [US]	Applicant:	EC:	IPC: B64D7/00 F41H11/02 <u>F42</u> B12/70	Publication info: <u>US</u> 2012074163 (A1) 2012-03-29	Priority date: 2009-02-09
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☐ 4. COMPRESSION SPRING WING DEPLOYMENT INITIATOR

Fonte: Espacenet

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COLT as the applicant AND **F42 OR F41** as the IPC classification

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SMITH AND WESSON as the applicant

Approximately **763** results found in the Worldwide database for:
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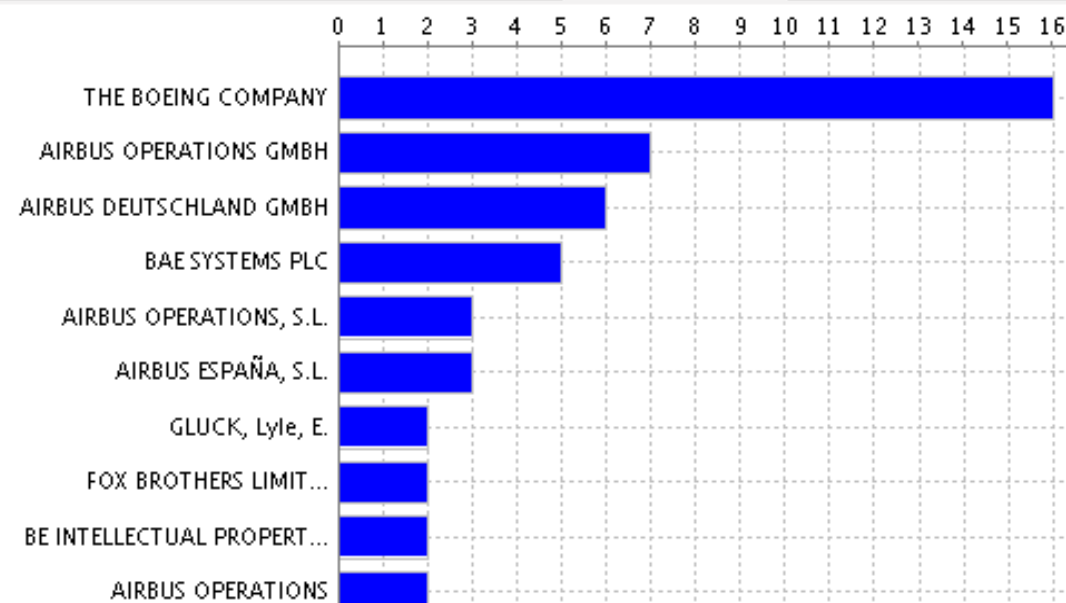
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Main Applicant

Main Inventor

Pub Date



Main Applicant

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Refine Search EN_AB:(machining and (aircraft* or airplane))

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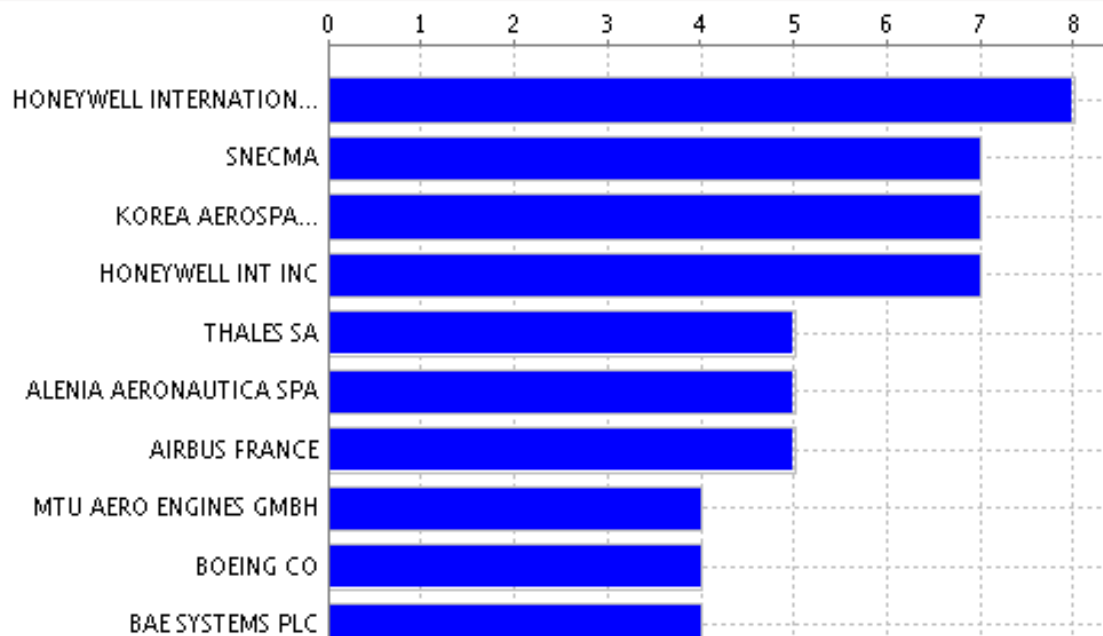
Main IPC

Main Applicant

Main Applicant

Main Inventor

Pub Date



Main Applicant

Name

No

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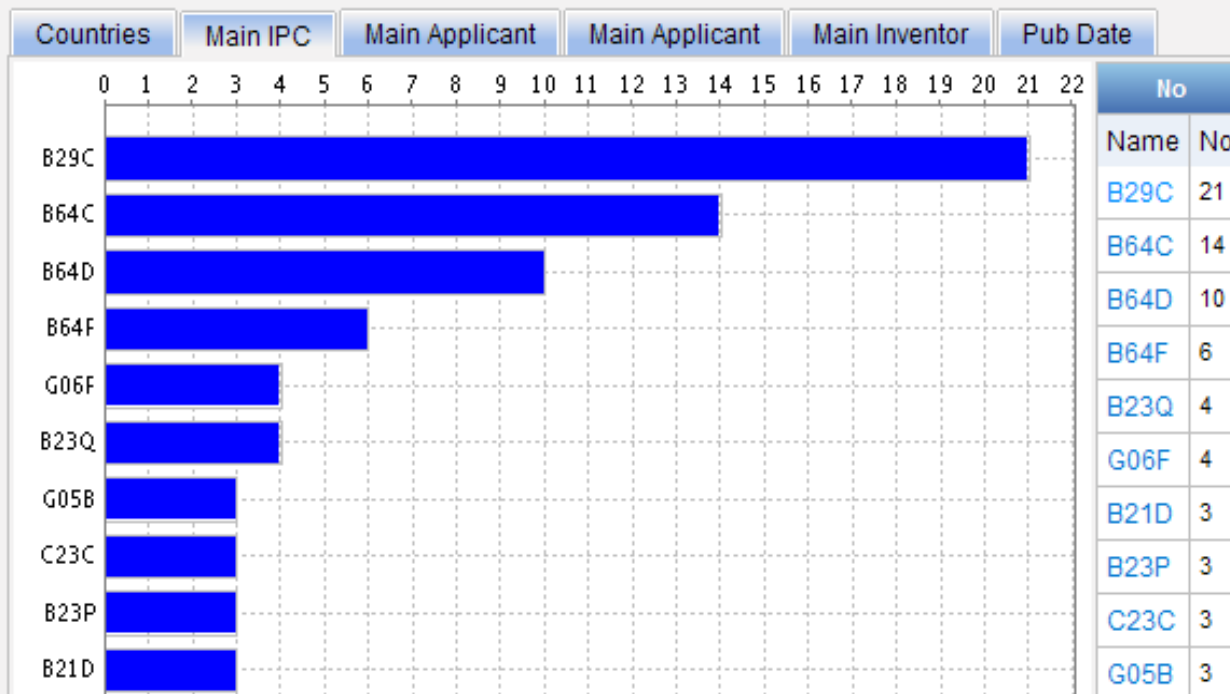
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☐ 1. **A MACHINING TOOL**

★	Inventor: ASKEY HOWARD WAYNE [NZ]	Applicant: AIR NEW ZEALAND LTD [NZ] ASKEY HOWARD WAYNE [NZ]	EC:	IPC:	Publication info: WO2012011048 (A2) 2012-01-26	Priority date: 2010-07-19
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☐ 2. **METHOD FOR POSITIONING TO THE NORMAL A TRANSLATION AXIS OF A CYLINDER DEVICE**

★	Inventor: LE VACON PHILIPPE [FR] SUAREZ ROOS ADOLFO [FR]	Applicant: EADS EUROP AERONAUTIC DEFENCE [FR] LE VACON PHILIPPE [FR] (+1)	EC: <u>B23Q1/54A5</u> <u>B23Q9/00C5B</u>	IPC: B23Q1/54 B23Q9/00	Publication info: WO2011157933 (A1) 2011-12-22	Priority date: 2010-06-16
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☐ 3. **METHOD FOR MANUFACTURING BLISKS**

★	Inventor: SECHERLING ARNO [DE] LOOF CARSTEN [DE]	Applicant: ROLLS ROYCE DEUTSCHLAND [DE]	EC: <u>B23P15/00E</u> <u>F01D5/34</u>	IPC: B23H5/06 B24B1/00 C25F3/02 (+1)	Publication info: US2011308966 (A1) 2011-12-22	Priority date: 2010-06-17
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☐ 4. **METHOD OF MACHINING ROTOR BLADE WEAR INDICATORS, AND ROTOR BLADE PLUG FOR IMPLEMENTING THE METHOD**

★	Inventor: HEBUTERNE DAMIEN [FR] LECOMTE JANVIER [FR]	Applicant: SNECMA [FR]	EC: <u>B23K26/16</u> <u>B23K26/18</u> (+1)	IPC: B23C1/00 B23P15/04 F16L55/11	Publication info: US2011296687 (A1) 2011-12-08	Priority date: 2010-06-03
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Fonte: Espacenet

METHOD FOR MACHINING CAVITIES IN A TURBOMACHINE TURBINE DISC, TURBOMACHINE TURBINE AND MILLING MACHINE

Page bookmark [WO2011148074 \(A1\) - METHOD FOR MACHINING CAVITIES IN A TURBOMACHINE TURBINE DISC, TURBOMACHINE TURBINE AND MILLING MACHINE](#)

Inventor(s): BELMONTE OLIVIER [FR]; LEBOULANGER JEAN-PIERRE [FR]; VARONE BRUNO [FR]; WELLER LIONEL RENE HENRI [FR] ±

Applicant(s): SNECMA [FR]; BELMONTE OLIVIER [FR]; LEBOULANGER JEAN-PIERRE [FR]; VARONE BRUNO [FR]; WELLER LIONEL RENE HENRI [FR] ±

Classification: - **international:** [B23C3/30](#); [B23C7/00](#); [F01D5/30](#)
- **European:** [B23C3/30](#); [B23C7/00](#)

Application number: WO2011FR51069 20110512

Priority number(s): FR20100054110 20100527

Also published as: [FR2960461 \(A1\)](#)

Abstract of WO2011148074 (A1)

Translate this text into **i**

German

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The invention relates to a method for machining peripheral cavities (3) in a turbine disc (2) of a turbomachine, such as an **aircraft** turbojet or turbofan engine, which involves machining the cavities (3) by milling using a substantially cylindrical milling cutter (7) of length (L) greater than the axial thickness (e) of the disc (2) and which runs substantially parallel to the axis of the disc (2), the contour (8) of the cavities (3) being machined by moving the milling cutter (7) at right angles to its axis along the profile of each cavity (3). The invention also relates to a turbomachine turbine comprising a disc machined by executing the method and to a milling machine for use in the method with two parallel arms (6) the ends of which each hold one end of a cylindrical milling cutter (7).

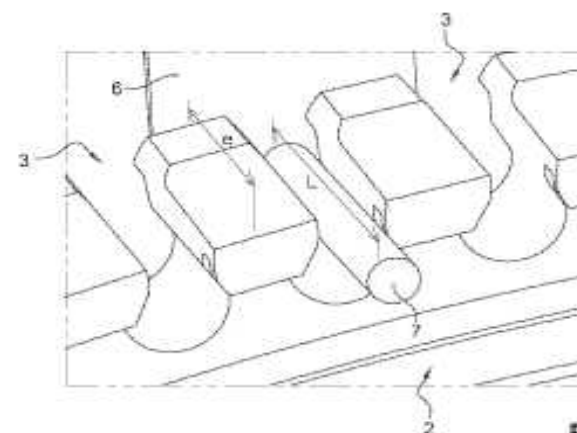


Fig. 4

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<http://www.wipo.int/patentscope/search/en/structuredSearch.jsf>

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AIRPLANE^{*} OR AIRCRAFT^{*} in the title or abstract AND **G01B** as the IPC classification
 Only the first **500** results are displayed.

Results are sorted by date of upload in database

☐ 1. **TRANSDUCER MOUNTING STRUCTURE FOR A VERTICAL TAIL OF AN AIRCRAFT**

★ Inventor: LI YUPING [CN]	Applicant: AIRBUS SAS [FR] LI YUPING [CN]	EC:	IPC: B64D45/00 G01B 21/22	Publication info: WO2012024838 (A1) 2012-03-01	Priority date: 2010-08-26
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☐ 2. **Semiconductor strain gauge array**

★ Inventor: DUENAS TERRISA [US] JOSHI SHIV [US] (+1)	Applicant:	EC: <u>G01B7/18</u> <u>H01L29/84</u>	IPC: G01B 7/16 H01L21/02	Publication info: US2012031192 (A1) 2012-02-09	Priority date: 2010-08-04
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☐ 3. **METHOD FOR ASSESSING A GROUND AREA FOR SUITABILITY AS A LANDING ZONE OR TAXI AREA FOR AIRCRAFT**

★ Inventor: MUENSTERER THOMAS [DE] WEGNER MATTHIAS [DE]	Applicant: EADS DEUTSCHLAND GMBH [DE]	EC: <u>G01S13/89</u> <u>G01S17/89</u> (+2)	IPC: B64D45/04 G01C23/00 G01B 11/30 (+2)	Publication info: CA2747652 (A1) 2012-01-30	Priority date: 2010-07-30
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☐ 4. **METHOD AND DEVICE FOR ADHESIVELY JOINING LARGE-SURFACE COMPONENTS IN VEHICLE CONSTRUCTION**

★ Inventor: NIERMANN DIRK [DE] FRAUEN HOLGER [DE]	Applicant: AIRBUS OPERATIONS GMBH [DE] FRAUNHOFER GES FORSCHUNG [DE]	EC: <u>B05C11/10A6D</u> <u>B64C1/06S</u> (+1)	IPC: B05C11/10 B62D27/02 B64F5/00 (+1)	Publication info: CA2754699 (A1) 2010-09-23	Priority date: 2009-03-19
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☐ 5. **Measurement assembly and method for aircraft sheet metal components**

★ Inventor: XUEFENG DUAN JUNBIN WANG (+4)	Applicant: XIAN AIRCRAFT INDUSTRY GROUP CO LTD	EC:	IPC: G01B 5/00	Publication info: CN102221317 (A) 2011-10-19	Priority date: 2011-03-18
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☐ 6. **Structural element for a fuselage cell structure of an aircraft, comprising at least one positioning aid**

★ Inventor: RALPH ARNOLD	Applicant: AIRBUS OPERATIONS GMBH	EC: <u>B64C1/06G</u>	IPC: B64C1/06 B64F5/00 G01B 21/04	Publication info: CN102224393 (A) 2011-10-19	Priority date: 2008-11-21
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G01B

MEDIÇÃO de:

comprimentos,
espessuras,
ângulos,
irregularidades
de superfícies e
contornos

Fonte: Espacenet

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AIRPLANE^{*} OR AIRCRAFT^{*} in the title or abstract AND **G01B17/00** as the IPC classification

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☐ 1. **Ultrasonic control device for use in robot to control drilling during forming hole on multilayer assembly in fuselage of aircraft, has wedge removably fixed to end of case and comprising blind hole formed in ultrasonic wave absorbing part**

★ Inventor: ITHURRALDE GUILLAUME [FR]	Applicant: EADS EUROP AERONAUTIC DEFENCE [FR]	EC: <u>G01N29/22C</u> <u>G01N29/22L</u> (+1)	IPC: G01B17/00 G01N29/00	Publication info: FR2957418 (A1) 2011-09-16	Priority date: 2010-03-15
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☐ 2. **Ultra-large luggage intelligent controller**

★ Inventor: HANWU HE [CN]	Applicant: HANWU HE [CN]	EC:	IPC: G01B17/00 G01B21/00 G01S15/08	Publication info: CN201016715 (Y) 2008-02-06	Priority date: 2006-09-14
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☐ 3. **Method of measuring the compression of a shock absorber, and an airplane undercarriage constituting an application thereof**

★ Inventor: SEROR CHRISTELLE [FR]	Applicant: MESSIER DOWTY SA [FR]	EC: <u>B64C25/60</u> <u>F16F9/32C</u>	IPC: B60G17/00 B64C25/02 B64C25/60 (+7)	Publication info: US2005230200 (A1) 2005-10-20 US7454275 (B2) 2008-11-18	Priority date: 2004-04-19
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☐ 4. **Towing vehicle for aircraft**

★ Inventor: MOELZER PETER [DE] FRANCKE ERWIN [DE]	Applicant: KRAUSS MAFFEI AG [DE]	EC: <u>B64F1/22</u> <u>G01B21/22</u> (+2)	IPC: B60P3/11 B64F1/10 B64F1/22 (+14)	Publication info: DE4306026 (A1) 1994-09-01 DE4306026 (C2) 1997-09-18	Priority date: 1993-02-26
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☐ 5. **SURFACE ACOUSTIC WAVE TRANSDUCER**

★ Inventor:	Applicant: UNITED AIRCRAFT CORP	EC: <u>G01L9/00A10E4</u> <u>G10K11/36</u> (+1)	IPC: G01B17/00 G01D5/48 G01L11/00 (+11)	Publication info: GB1486377 (A) 1977-09-21	Priority date: 1974-02-25
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G01B17/00

17/00 Disposições de medição, caracterizadas pela utilização de vibrações infra-sônicas, sônicas ou ultra-sônicas [4]
 17/02 para medição de espessuras
 17/04 para medição da deformação de um sólido, por ex., por cordão vibratório
 17/06 para medição de contornos ou curvaturas [6]
 17/08 para medição de aspereza ou irregularidade de superfícies [6]

Fonte: Espacenet



Results 1-10 of 125 for Criteria:EN_AB:(TOOLING AND (AIRPLANE* OR AIRCRAFT*)) Office(s):wo Language:EN Stemming: true

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Countries		Main IPC		Main Applicant		Main Inventor		Pub Date	
Name ↕	No ↕	Name ↕	No ↕	Name ↕	No ↕	Name	No ↕	Date ↕	No ↕
PCT	125	B29C	21	THE BOEING COMPANY	16	BOLD, Jens	5	2002	9
		B64C	14	AIRBUS OPERATIONS GMBH	7	LEVERS, Andrew	2	2003	6
		B64D	10	AIRBUS DEUTSCHLAND GMBH	6	KOIKE, Shinji	2	2004	7
		B64F	6	BAE SYSTEMS PLC	5	GLUCK, Lyle, E.	2	2005	13
		G06F	4	AIRBUS OPERATIONS, S.L.	3	FOX, William, W.	2	2006	6
		B23Q	4	AIRBUS ESPAÑA, S.L.	3	CLARK, Randall, R.	2	2007	8
		G05B	3	GLUCK, Lyle, E.	2	AULGUR, Charles, C.	2	2008	14
		C23C	3	FOX BROTHERS LIMITED PARTNERSHIP	2	ANDERSON, Orin, M.	1	2009	11
		B23P	3	BE INTELLECTUAL PROPERTY, INC.	2	ALLAEI, Daryoush	1	2010	12
		B21D	3	AIRBUS OPERATIONS	2	AHN, Sang-chul	1	2011	8
								2012	5

Sort by: Relevance



Sort by: Relevance

No	Ctr	Title	PubDate	Int.Class	App.No	Applicant	Inventor
1.	WO	WO/2012/011048 - A MACHINING TOOL	26.01.2012		PCT/IB2011/053204	AIR NEW ZEALAND LIMITED	ASKEY, Howard Wayne

The present invention relates to separate **tooling** components making up a kit that are adapted and configured to cooperate with each other to allow the in situ re-boring of a bored member such as an anchoring member of an **aircraft**. The kit includes an alignment tool, a frame, and a boring tool. The alignment tool indexes the axis of the bore, the frame fastens and indexes the axis of the bore relative to the alignment tool, and the boring tool indexes the axis of the bore from the frame, and rebores the bore about the referenced axis.

2.	WO	WO/1996/035567 - FABRICATION OF LARGE HOLLOW COMPOSITE STRUCTURE	14.11.1996	B29C 33/00	PCT/US1996/006543	MCDONNELL DOUGLAS CORPORATION	REILING, Henry, E., Jr.
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A method for fabricating a composite structure such as an **aircraft** radome (20) includes preparing seamless female support mold (76)/caul plate (78) **tooling**, and seamless male support mold (114)/vacuum bag (124) **tooling**. An uncured composite structure is collated on the external surface of the male support mold (114)/vacuum bag (124) **tooling**, and then transferred to the female support mold (76)/caul plate (78) **tooling** for curing. The female support mold (76)/caul plate (78) **tooling** defines the outer surface of the final composite structure (132), permitting the outer surface to be smooth and of an aerodynamic shape.

3.	WO	WO/2010/117396 - AIRSPACE DECONFLICTION SYSTEM	14.10.2010	G08G 5/04	PCT/US2009/069563	THALES-RAYTHEON SYSTEMS COMPANY LLC	RIBBE, James, A.
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According to one embodiment, an airspace deconfliction system includes a deconfliction tool coupled to a data repository that stores records describing airspace objects, such as routes to be taken by an **aircraft**, airspace regions, and/or corridors. The deconfliction tool determines conflicts in the geographic location of the one airspace object with the geographic location of at least one of the other airspace objects.

4.	WO	WO/2009/111466 - AUTOMATED PROTOTYPING OF A COMPOSITE AIRFRAME	11.09.2009	B29C 70/00	PCT/US2009/035870	KAREM, Abe	KAREM, Abe
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A high quality finished prototype fuselage structure of an **aircraft** is manufactured using a cured female tool and an automated composite layup machine, and then touched up by hand to meet a tolerance or other specification. The female tool is preferably made from a male mold, by depositing layers of composite material over the mold, curing the tool together at a first cure temperature, separating the tool from the mold, and then curing the tool at a second, higher temperature. The first cure temperature should be at or below an upper limit temperature no greater than 180°F. The second cure temperature is preferably in the range of 250°F to 350°F. The step of hand touching up can comprise one or more of mechanically abrading and deforming a first portion of the fuselage structure to mate with a second portion of the fuselage structure.

5.	WO	WO/2009/128992 - METHOD AND SYSTEM FOR ESTABLISHING THE LINE OF FLIGHT OF AN AIRPLANE	22.10.2009	B23P 19/00	PCT/US2009/036194	THE BOEING COMPANY	STONE, Patrick, B.
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A method is provided for establishing a physical reference inside an **airplane** representing the **airplane's** optimized line of flight based on the as-built orientation of aerodynamically significant features of the **airplane**. Values generated for aerodynamic pitch, roll and yaw representing the optimized line of flight are used to orient a tool reference surface outside the **airplane**. The orientation of the tool reference surface is recorded using an inertial reference unit placed on the tool reference surface. The tool reference surface and inertial reference unit are moved into the **airplane** where they are used to establish the physical reference on the airframe.

Latest bibliographic data on file with the International Bureau



Pub. No.: WO/2012/011048

International Application No.: PCT/IB2011/053204

Publication Date: 26.01.2012

International Filing Date: 19.07.2011

IPC:

Applicants: AIR NEW ZEALAND LIMITED [NZ/NZ]; 185 Fanshawe Street Auckland, 1010 (NZ) *(For All Designated States Except US).*

ASKEY, Howard Wayne [NZ/NZ]; (NZ) *(For US Only)*

Inventors: ASKEY, Howard Wayne; (NZ)

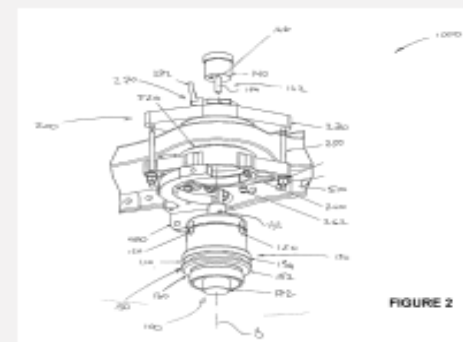
Agent: BLIJLEVEN, Antonius, P, H; A J Park 6th Floor Huddart Parker Building PO Box 949 Wellington, 6015 (NZ)

Priority Data: 586877 19.07.2010 NZ

Title
(EN) A MACHINING TOOL
(FR) MACHINE D'USINAGE

Abstract: (EN)The present invention relates to separate tooling components making up a kit that are adapted and configured to cooperate with each other to allow the in situ re-boring of a bored member such as an anchoring member of an aircraft. The kit includes an alignment tool, a frame, and a boring tool. The alignment tool indexes the axis of the bore, the frame fastens and indexes the axis of the bore relative to the alignment tool, and the boring tool indexes the axis of the bore from the frame, and rebore the bore about the referenced axis.

(FR)La présente invention concerne des éléments d'outillage distincts constituant un kit, qui sont conçus et adaptés pour coopérer les uns avec les autres afin de permettre le réalésage in situ d'un élément percé, tel qu'un élément d'ancrage d'un aéronef. Le kit comprend un outil d'alignement, un cadre et un outil à aléser. L'outil d'alignement positionne l'axe de l'alésage; le cadre fixe et positionne l'axe de l'alésage par rapport à l'outil d'alignement; et l'outil à aléser positionne l'axe de l'alésage à partir du cadre et accomplit le réalésage autour de l'axe de référence.



Designated States: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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Publication Language:

English (EN)

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patente

(12) **United States Patent**
Floyd et al.

(10) **Patent No.:** **US 8,104,158 B2**
(45) **Date of Patent:** **Jan. 31, 2012**

(54) **DETECTING AND REWORKING
INCONSISTENCIES PROXIMATE AIRCRAFT
SPLICE JOINTS**

(75) Inventors: **Joseph F. Floyd**, University Place, WA
(US); **John R. Linn**, Maple Valley, WA
(US)

(73) Assignee: **The Boeing Company**, Chicago, IL
(US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 299 days.

(21) Appl. No.: **12/484,611**

(22) Filed: **Jun. 15, 2009**

(65) **Prior Publication Data**
US 2009/0288529 A1 Nov. 26, 2009

Related U.S. Application Data
(63) Continuation-in-part of application No. 10/928,543,
filed on Aug. 26, 2004, now abandoned.

(51) **Int. Cl.**
B23P 6/00 (2006.01)

(52) **U.S. Cl.** **29/402.11**
(58) **Field of Classification Search** 29/402.11,
29/402.01-402.09, 407.01, 407.04; 324/240;
244/131; 83/13

See application file for complete search history.

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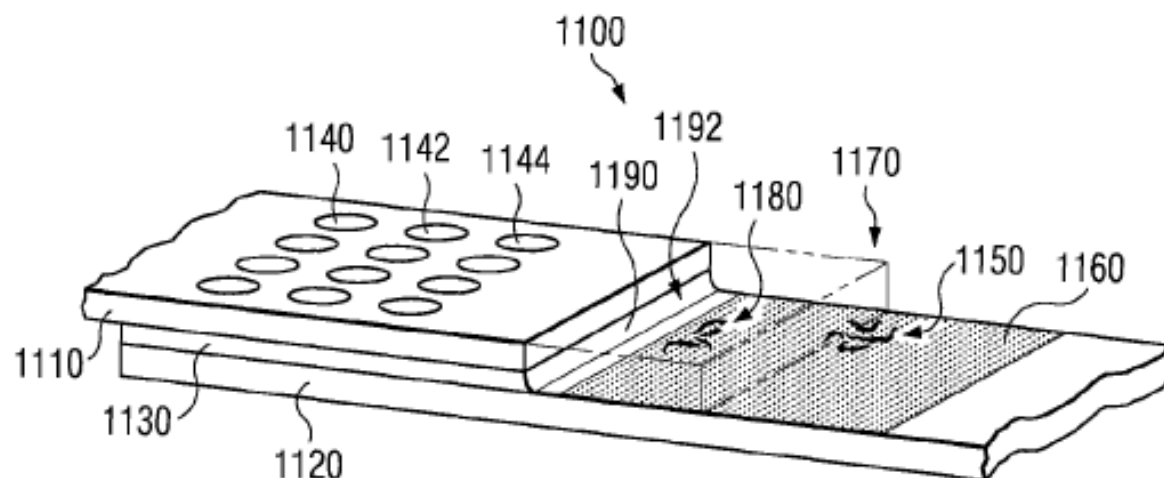
Primary Examiner — John C Hong

(74) *Attorney, Agent, or Firm* — Yee & Associates, P.C.

(57) **ABSTRACT**

Detecting inconsistencies proximate a panel splice joint involves trimming a portion of a first panel overlapping a second panel to expose a previously overlapped region of the second panel. The previously overlapped region of the second panel may be inspected to detect any inconsistencies present thereon after trimming the portion.

35 Claims, 10 Drawing Sheets



Disseminação da Propriedade Intelectual - Resultados

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Total	444

NORDESTE	
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Avançado	280
Oficinas/Outros	46
Total	1339

CENTROESTE	
Básico	459
Intermediário	198
Avançado	149
Oficinas/Outros	92
Total	898

SUDESTE	
Básico	2108
Intermediário	744
Avançado	467
Oficinas/Outros	716
Total	4035

SUL	
Básico	495
Intermediário	313
Avançado	231
Oficinas/Outros	387
Total	1426

Ano	Cursos	Participantes
2005	15	574
2006	57	1695
2007	37	1184
2008	34	891
2009	32	1011
2010	34	1176
2011	52	1611
Total	261	8142