

行政院及所屬各機關出國報告
(出國類別： 考察)

參訪巴西 Atech / Tectelcom 等公司
及美國貝克公司

服務機關：中山科學研究院
出國人職稱：簡聘技監
姓 名： 楊培基
出國地區： 美國、巴西
出國期間： 90.06.22 至 90.07.01
報告日期：90.07.09

公務出國報告提要

頁數: 16 含附件: 是

報告名稱:

參訪巴西Atech/Tectelcom等公司及美國貝克公司

主辦機關:

國防部中山科學研究院

聯絡人/電話:

/

出國人員:

楊培基 國防部中山科學研究院 電子系統所 簡聘技監

出國類別: 考察

出國地區: 巴西 美國

出國期間: 民國 90 年 06 月 22 日 -民國 90 年 07 月 01 日

報告日期: 民國 90 年 07 月 09 日

分類號/目: IO/綜合(科學類) IO/綜合(科學類)

關鍵詞: 雷達高度計(RA)、氣象雷達(WR)、航管終端雷達(TR)、碼型S答詢機(Mode S Transponder)、航管(Air Traffic Control)

內容摘要: 由於先進機載航電計畫未來產品市場是以國外為主,故於年初與德國貝克公司簽署合作備忘錄,希能利用其通路與品牌爭取市場。故此次應其邀請,與資策會結合成一訪問團,訪問巴西Atech、Tectelcom等公司,以尋求商機或增取可能之合作機會。另由於先進機載航電計畫已進入第二年度,雷達高度計分項由於進度較快,研製以近完成,後續需邊找市場,邊進行航電認證及與業界合作生產之準備,故亦藉此行與貝克公司總裁洽談進一步合作事宜。

本文電子檔已上傳至出國報告資訊網

CSIPW-90E-H1000

國外公差報告

(90)蓮茹所會字, (0)號

中山科學研究院

國外公差心得報告

批		示		
閱 慶 07/14				
公年 差度	90	所屬單位 各級主管	政戰部	企劃處
單位	電空 子用 研電 究子 所組		已完成資料審查。	如另簽
級 職	簡 聘 技 監			
姓 名	楊 培 基	電子系統研究所 組長 楊培基 0709 1610	政戰部 防員 顏中深 0827 1100	企劃處 鄧貴德 0808 1510

中山科學研究院
仲澤騰
0630

7/14

圖書分館：

已登錄

李孔若
0712
0835

90.7.17
車查審

(90) 蓮茹所會字 110 號

企劃處意見：

- 一、本報告建議事項第一項「難找到推銷或介紹本院或本所能量之英文版電子檔」，本處（綜合管理組）有「本院簡介」英文版印刷刊物用合成影像檔，各單位可依需要協調本處辦理。
- 二、建議事項第三項「建議有些共通性的問題應委由剛成立之科專辦公室通盤建立制度」，如屬科專計畫執行問題可先洽科專辦公室，如屬其他政策面問題，仍請以具體方式於軍通計畫會報中提報研討或專案簽會相關單位。
- 三、建議事項第五項「國外參展需報部且於一年前需先提報，程序上相當麻煩且不合時宜」，依出國計畫作業編審相關規定，公差出國需於一年前納入年度出國計畫，報國防部、行政院、經立法院核定，方可據以執行。另建議「放寬科專案之參展程序，由科專計畫室依該計畫之年度工作計畫需求審查即可」，為求權責統一，仍請按本院出國案件審核作業規定辦理。
- 四、建議事項第二項「人力資源是否經適當整合」：「請加會人力資源處。」
- 五、呈核後，請將資料上傳行政院研考會網站，並請將報告裝訂四份送貴單位專責人員後轉送本處。電子檔送交本處「公差出國報告信箱」副本送專責人員。

企劃處
副處長 郭永聖

0813
1310

企劃處
沈從

0813
1310

國外公差人員返國報告主官（管）審查意見表

空用電子組：此次參訪與貝克公司達成若干後續合作之協議，對先進機載航電計畫之執行有很大的幫助。另對巴西 Tectelcom 公司之合作建議仍有待與貝克公司進一步澄清其可行性。

空用電子組
楊培基

0709

此次參訪除對先進機載航電計畫後續認證工作之規劃有所助益外，與巴西兩家公司之接觸亦可能開拓本所雷達技術輸出之商機。
急欲突破美俄英法独占局面

德國貝克公司企圖心甚旺，今年巴黎航太展亦於德國館區展出本院產品。考量本院屬性，目前先以經濟部科專案為窗口，廣蒐商情及慎選國內外合作伙伴，待評估可行時，將拟定方案報部奉核後推動執行。

空用電子組
長荆溪高

0727
1610

依本院 85.11.25 (85) 蓮菁字 15378 號令，返國報告上呈時應附主官評審意見

報 告 資 料 頁

1. 報告編號： CSIPW-90E-H1000	2. 出國類別： 考 察	3. 完成日期： 90 年 7 月 9 日	4. 總頁數： 16
5. 報告名稱： 參訪巴西 Atech/Tectelcom 等公司及美國貝克公司			
6. 核准 文號	人令文號	(90)銓鑑字第 004395 號	
	部令文號		
7. 經 費		新台幣：237,790 元	
8. 出(返)國日期		自 90 年 6 月 22 日至 90 年 7 月 1 日	
9. 公差地點		美國、巴西	
10. 公差機構		巴西 Atech/Tectelcom 等公司及美國貝克公司	
11. 附 記			

壹、出國目的及緣由

此次以先進機載航電科專計畫主持人名義出國，其目的有二：

- 一、 訪問巴西 Atech、Tectelcom 等公司並拜訪 DEPV (巴西民航局)等單位，希能在航電及雷達方面爭取商機。
- 二、 與德國貝克公司討論後續之合作事宜，如航電認證等。

至於出國緣由則因“先進機載科專計畫”主要市場在國外，為爭取國外市場，於年初與德國貝克公司簽署合作備忘錄希能藉其打開國外市場，如附件一。故此次應該公司邀請，與資策會組成一訪問團，訪問該公司認為商機頗大之國家—巴西。同時因本計畫雷達高度計等已近研製完成，故亦藉此機會進一步與貝克公司總裁 Mr. Becker 當面洽談後續合作事宜。

貳、公差心得

一、 訪問 Tectelcom 公司

Tectelcom 為巴西一私人公司，總公司^是Teccsat，類似關係企業，如附件二。其經營範圍頗廣泛，包含廣播電視、無線通訊、光纖製造、網際網路及航太。我方有興趣的訪問對象為該公司之航太部門。該部門承接了巴西政府委製之 Weather Radar (WR) 計畫。該計畫原需繳交十套 WR 給政府，但目前祇交五套，其中僅有一套正常工作。但因該公司財務困難，瀕臨倒閉邊緣，無法達成原訂計畫。該

公司為巴西唯一雷達製造公司，而巴西幅員廣大，對各種雷達需求頗大，巴西政府官員希望貝克公司能投資並協助其解決問題，以維持該公司之研製能量。貝克公司因而就此評估其投資效益及後續可能訂單，但在技術上需仰賴本院協助評估其可行性。若貝克公司初步評估該項投資仍有商機，後續則希望能與本院合作協助解決該公司問題，甚或進一步設計新雷達以爭取巴西廣大之 Weather Radar 及航管 Terminal Radar(TR)市場。

經訪問其工廠、相關裝備及與工程人員交談，職察覺該公司管理鬆散，員工效率不佳(竟找不了一個英語流利的工程師)，雷達相關能量之建立亦相當有限(約僅有約十個雷達工程師，其技術來源為德國另一家小公司，與貝克公司無關)。職認為未來貝克公司唯一機會為成立一新公司再招募適當人才，且需巴西政府再提供資金才可承接，以改善其目前雷達計畫。而若成功，再以“巴西國造雷達公司”之優勢，爭取巴西後續廣大的市場。(據評估其政府目前有 24 套 WR 及 44 套 TR 之需求，每套以單價最少二百萬美金來估，約有一億美元以上之市場。)在此必須說明的，巴西政府因外匯極缺、亟欲採國貨國造之作法。否則上述相關雷達，歐美公司均有成熟產品，實無須另建能量以自製。而據該公司稱，歐美相關公司都以賣成品為主，技轉意願不高。

在訪問時，職亦大略介紹本院雷達研發能量，他們對本院研發能量及相關工程師之素質頗驚訝的，並希本院能分階段對下列需求提出報價：1. 改良其現有 Weather Radar；2.設計新模組化雷達以同樣硬體滿足 Weather Radar 及 Terminal Radar 之任務需求；3.技術移轉巴西，使得能以巴西公司品牌並在巴西當地生產。就技術層面而言，對上述工作需求，以本院之技術能量似乎是可行，但需先獲得現有硬體(天線、發射機、接收機)詳細規格/架構等資料用以評估是否可用其現有硬體而祇修改 DSP 及軟體部份。

但職認為目前在下列狀況未明朗情況下，先不報價：1. 須先解決該公司財務問題，需有巴西政府出面承諾出資才有可能，此問題待貝克公司去澄清；2. 本案應視為科專計畫核心技術之衍生應用，未來仍以貝克公司承接此計畫而後再轉委託本院較為可行，此種關係亦需先澄清；3. 該公司須有重整計畫，否則在目前管理狀態下，會有事倍功半之效，很難與其在技術上合作(連語言都無法溝通)。故，除非長官另有指示，否則建議目前暫不動作，等貝克公司將上述問題進一步澄清，狀況較明朗後再說。

二、訪問 Atech 公司

Atech 全名叫 Amazon Technique，為一在美國註冊，巴西人擁有之公司，公司約有 130 名員工，以執行一叫 SIVAM 之計畫為主。SIVAM

計畫號稱全世界最大之單一航管(Air Traffic Control)計畫，為巴西政府耗資 1.5 Billions 美金由美 Raytheon 公司承包之計畫。而 Atech 公司則為實際與 Raytheon 公司合作執行此計畫之巴西公司(類似以 Offset 方式)。其主要計畫內容為為廣大之 Amazon 區域建構一軍民兩用之航管系統(軍方用途中也包括部份指管通情之功能)。故本質上，Atech 為一軟體及系統整合公司，為將分散各地航管雷達透過衛星等各種網路結合。因 SIVAM 計劃已進行了三年，可能不須再與本院或資策會合作。而未來可能之合作方向為新一代 CNS/ATM 系統，且該公司表明對本計畫正發展之 Mode S Transponder 及氣象雷達產品表達高度興趣，並可能於八月台北航太展時來台訪問。據說，此 Atech 公司角色類似中科院，為政府有計畫培養之公司，未來將再擴大發展其他領域，公司管理較像樣，為較可與之合作之公司。

三、與貝克公司洽談進一步合作事宜

因本科專計畫之市場主要是在國外，為滿足打入高門檻之航電國外市場，本計畫去年曾與德國貝克公司簽合作意願書(MOU)，以貝克公司之市場通路與品牌結合本院之技術與經濟部之資金，嘗試打入國外市場。因本年度有些項目(如雷達高度計)已接近研發完成，後續需作航電認證及導入生產之準備，需借重貝克公司在這方面之經

驗與能量，故須與該公司洽談進一步合作事宜。討論結果如下：

1. 貝克公司將指定專人作為單點與我方工程人員持續溝通有關航電認證事宜，該員並預訂來台一趟與我人員作面對面討論。
2. 為深入瞭解如何導入生產過程及認證事宜，該公司建議我方派一至二員工程人員赴德，因該過程牽涉到許多專業及部門，最好赴德就近瞭解，未來才能將認證工作規劃完整並據以順利執行。
3. 貝克公司將於九月前義務協助本計畫完成雷達高度計及 Mode S Transponder 之 Market Survey。
4. 貝克公司將澄清能在台灣執行認證之工作部份及資格要求(依歐洲 JAA 或美國 FAA 之要求)，原則上，我方要求若可能儘量在台執行。我方希能藉此建立在航電認證方面之能量。
5. 貝克公司認為欲爭取後續訂單，本計畫各分項應把握明年之柏林航太展及直昇機航展，展示成熟產品及相關測試資料。
6. 有關本計畫未來要提出之整合型航電系統，貝克公司很有興趣參與，並可提供其手頭上的 Market Survey 資料。
7. 對於本計畫未來與貝克公司“合作生產”之作法，本計畫 PMO 需澄清其與業界合作之程序，使能符合經濟部要求及本院相關規定。

8. 為使產品具市場競爭力，部份元組件在生產時需藉貝克公司尋找商源(Sourcing)，以求 Cost-Down，增加市場競爭力。

四、巴西國情介紹

巴西為南美第一大國，幅員遼闊，人口約一億七千萬，但集中在東南沿海地區，如：聖保羅人口有一千八百萬，里約熱內盧人口有一千萬，而交通建設又非臻完善，故都市地區交通混亂。巴西經濟狀況不佳，主要原因為外債高築，幣值波動大，平均國民所得約三千五美金。貧富落差大，教育不普及，雖號稱資源多卻經營不善。職所接觸之部份公司員工時間觀念不夠，效率不高，感覺該國亟需生產管理人才及外來資金。

巴西目前並不承認台灣護照(入關詢問甚多，不甚友善)，距離台灣甚遠，搭飛機需一、兩天才到得了。此次由於要訪問邁阿密之美國貝克分公司，故經 LA、邁阿密，再到巴西，故旅程花了兩天才到，相當累人。未來可經紐約或巴黎轉機，機票較便宜也較快抵達。由於生活水平不高，語言以葡語為主，以英語不大能溝通，外來人士容易被騙，凡事需據理力爭。

參、效益分析

- 就訪問巴西 Atech 及 Tectelcom 公司而言，此次參訪為第一次接

觸，一方面讓其對本院研發能量有興趣埋下了未來合作之種子，另一方面，對機載航電計畫本身，也推介了本計畫將研製之成品，對方也表達極高的興趣。

- 就與貝克公司之洽談合作方面，除藉此訪問進一步瞭解該公司之優勢能量(通路與品牌)，作為未來策略聯盟之合作方向外，也討論出目前在認證或市場方面合作之具體行動事項(Action Items)。

肆、國外工作日程表

90.06.22	去程經洛杉磯至邁阿密
90.06.23/24	參訪貝克公司邁阿密分公司，瞭解該分公司營運情況。
90.06.25	搭機赴巴西聖保羅，並與貝克公司老板討論合作事宜。
90.06.26	參訪巴西 Atech 公司
90.06.27	參訪巴西 Tectelcom 公司後，搭機赴里約熱內盧。
90.06.28	拜訪巴西民航局長(DEPV)
90.06.29	與貝克公司老板討論訪問成果，並達成後續進一步合作之行動事項，後搭機赴邁阿密。
90.06.30- 07.01	回程經洛杉磯返國。

伍、社交活動

本次差旅在邁阿密與貝克公司副總裁 Mr. Rigor 見了兩次面，他原為古巴軍人，後利用至歐出差之機會逃到美國，家人亦歷經千辛萬苦陸續抵美，其為人和善、工作勤勉，前途可期。

於巴西則與貝克本人相處數天，貝克本人大小事自己來，精力充沛，滔滔不絕，自己作 Marketing，認識不少各國政府官員及各航太公司高層。至於巴西民航局長為現役空軍少將，看起來為人蠻謙和、正直、樂於助人的。惜原先安排之巴西科技部長因其臨時有急事，未能見到。

陸、建議事項

此行來去行程緊湊，感覺像扮演推銷員角色，有時替先進機載航電計畫推銷，有時替本所之雷達能量推銷，有時則在替中科院推銷。在此過程中是有些感想與建議。

1. 本院在宣傳資料、行銷人才及行銷制度方面有待加強：本院願景放眼國際，行前卻難找到推銷或介紹本院或本所能量之英文版電子檔。唯一找到企劃處之紙版介紹全院能量(主要是武器研發)之資料又沒電子檔，無法截取適合場面之必要資料作宣傳，僅能以口頭說明之。同行之資策會同仁資料就介紹得有聲有色的，讓對方印象深刻。當然，職亦知縱使有這些資料可能仍須批核程序才能對外宣傳(缺乏有效制度)，緩不濟急。這在此一

切靠行銷之資訊時代裡已是不合時宜。本院實應適度引進行銷人才、建立行銷制度/專責單位(一旦任何單位有需求均可透過此單位得到合法及適當之資料)、並逐步往所/組推行。

2. 當國外各單位/公司聽到本院有五、六百個博士，二千多個碩士時均頗為驚訝，羨慕本院有如此豐沛之人力資源。因在此資訊時代，大家都知道人才是最重要的公司資產。然而，吾人不禁要反省，本院如此多人才是否已發揮其該有之戰力，人力資源是否經適當整合?人員是否經充分之訓練與培養?人才是否適才適所?否則也祇是空有數字嚇嚇人而已。
3. 經濟部科專計畫目標在利用本院技術能量來扶持國內產業。但要有產業得先有訂單或打入市場。而像航太工業，因牽涉到認證要求、進入障礙高，市場得先由國外打起，而後再回流國內。利用國外公司之品牌與通路、與國外公司策略聯盟才可能有成功機會。先進機載航電計畫原希能透過工研院與國外大廠(如Honeywell)掛鉤，但截至目前為止大廠合作意願不高。故本計畫目前之作法，以德國貝克公司為合作對象(該公司本身亦有意願)，產品以用在中小型飛機或直昇機上之航電為目標(此為貝克公司之專長)，使能先利用其通路與品牌找到訂單，能將本計畫產品先用到某些飛機上，而後等時機成熟，再轉向大飛機市

場。對本院而言，這合作過程是有很多困難須解決。首先得解決程序問題，未來產品如何與廠商訂定生產合約使能同時滿足本院/經濟部相關法規及產品認證程序之需求。如何能將生產主要過程留在國內以符合經濟部扶植國內產業之目標。如此作為，又如何能在技術轉移業界的同時能使本院在後續生產仍能有經費上之回饋。這些，都是需逐一面對及解決之問題。建議有些共通性的問題應委由剛成立之科專辦公室通盤建立制度，以利各計畫之執行。

4. 至於與巴西這種第三世界國家合作，除非透過政策面運作(如外交部、經濟部或國防部)，本院才宜上檯面，否則建議目前宜祇以透過貝克公司之聯繫。未來若有合作機會(如氣象雷達或航管雷達)亦經由台灣貝克公司轉委託本院來執行，如此在本院制度上較為可行。
5. 目前國外參展需報部且於前一年須先提報，程序上相當麻煩且不合時宜。而像本計畫市場在國外，若不把握機會將產品在國外航太展中展出促銷，根本沒機會拿到訂單。故建議宜放寬科專案(反正不牽涉到國防機密)之參展程序，由科專計畫室依該計畫之年度工作計畫需求審核即可，如此才可爭取時效。

MEMORANDUM OF UNDERSTANDING

between

CSIST

Airborne Electronic Section
Electronics Division
Chung-Shan Institute of Science & Technology
Lung-Tan, Tao-Yuan
Taiwan, R.O.C.
(herein known as CSIST/MOEA'S AVIONICS PROJECT)

and

BECKER FLUGFUNKWERK GMBH

Baden Airpark,
77836 Rheinmünster
Germany

BECKER ELECTRONICS TAIWAN LTD.

81, Li Kung Street, Peitou,
Taipei, Taiwan
Taiwan

(jointly hereinafter referred to as BECKER)

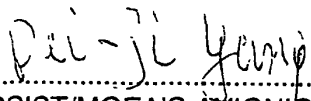
- 1 CSIST/MOEA'S AVIONICS PROJECT and BECKER intend to do joint business activities in design, development, certification, production, trading, marketing, sales and support of communication and navigation products.
- 2 CSIST/MOEA'S AVIONICS PROJECT is an organization sponsored by the Ministry of Economic Affairs, operating under the laws of the Republic of China (Taiwan) and has significant experience in research and development and technological expertise for avionics and service industry in Taiwan.
- 3 BECKER has a long experience in design, development, certification, production, trading, marketing, sales and support of communication and navigation products and systems. BECKER has especially knowledge in communication and navigation products for civilian and military aviation and experience to certify, market and support these products worldwide, especially in Europe and USA.
- 4 BECKER intends to certify, produce, market, sell, integrate, install and support CSIST/MOEA'S AVIONICS PROJECT products including subassemblies, parts or software worldwide. If BECKER needs more information or any product needs a modification to confirm with local standards or general customer demands CSIST/MOEA'S AVIONICS PROJECT will do its best to provide necessary information or changes and grants BECKER the exclusive marketing rights outside Taiwan.
- 5 Each party will define one or more program managers to be responsible for the communication between CSIST/MOEA'S AVIONICS PROJECT and BECKER.
- 6 CSIST/MOEA'S AVIONICS PROJECT and BECKER will agree on joint projects. If any party wishes to participate in a similar project with a third party it shall inform the other

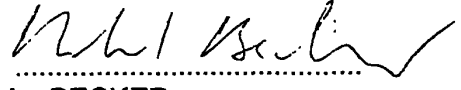
P. f. 12/13

party about these intentions. This information shall contain the third parties name, including the parent company and the projects goal.

7. The initial joint projects are Mode-S Transponder, Digital Multi Mode Radio, Airborne Weather Radar and Radio Altimeter.
 - 7.1 For the Mode-S Transponder a functional prototype should be finished by CSIST/MOEA'S AVIONICS PROJECT till end of 2001. BECKER will invite a lead customer to visit and verify the product after Chinese New Year in 2002.
 - 7.2 The DMMR shall be ready for production in 2003. BECKER will provide engineering assistance to finalize the specification complying with current specifications (March/April 2001) and for the industrialization. BECKER will provide it's design team of the new analog transceiver to make sure that this will be a common basis also for the DMMR.
 - 7.3 For the Airborne Weather radar, BECKER will source a reliable ARINC708 compliant transmitter/receiver and antenna to be combined with the DSP technology.
 - 7.4 The Radio Altimeter should be ready for production in June 2002. BECKER will provide additional flight tests in Europe after the flight tests in Taiwan are completed and will provide engineering assistance after the pre-qualification tests are completed.
8. Samples of the mode-S transponder, weather radar, the radio altimeter should be displayed at the Paris AirShow in June 2001. CSIST/MOEA'S AVIONICS PROJECT are invited to participate BECKER's booth at the Paris Airshow.
9. BECKER will explore market opportunities for upgrades of ground based weather radar systems to terminal radars in Brazil. CSIST/MOEA'S AVIONICS PROJECT will support this evaluation.
10. Both parties wish to enter into a long-term relationship. The purpose for this memorandum of understanding is to provide a good basis for information exchange, to be able to rely on each other and to allow both parties to do a good planning. Both parties agree, that they will inform each other about anything which might have impact on the joint projects.

Tao-Yuan


.....
for CSIST/MOEA'S AVIONICS PROJECT
Pei-Ji, Yang
Director

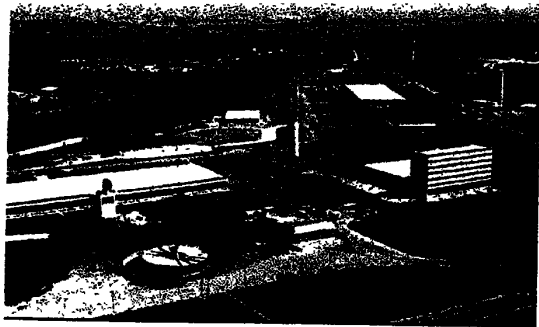
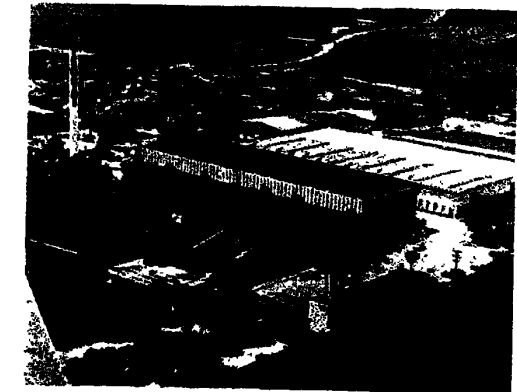

.....
for BECKER
Mr. Roland Becker
CEO & Owner

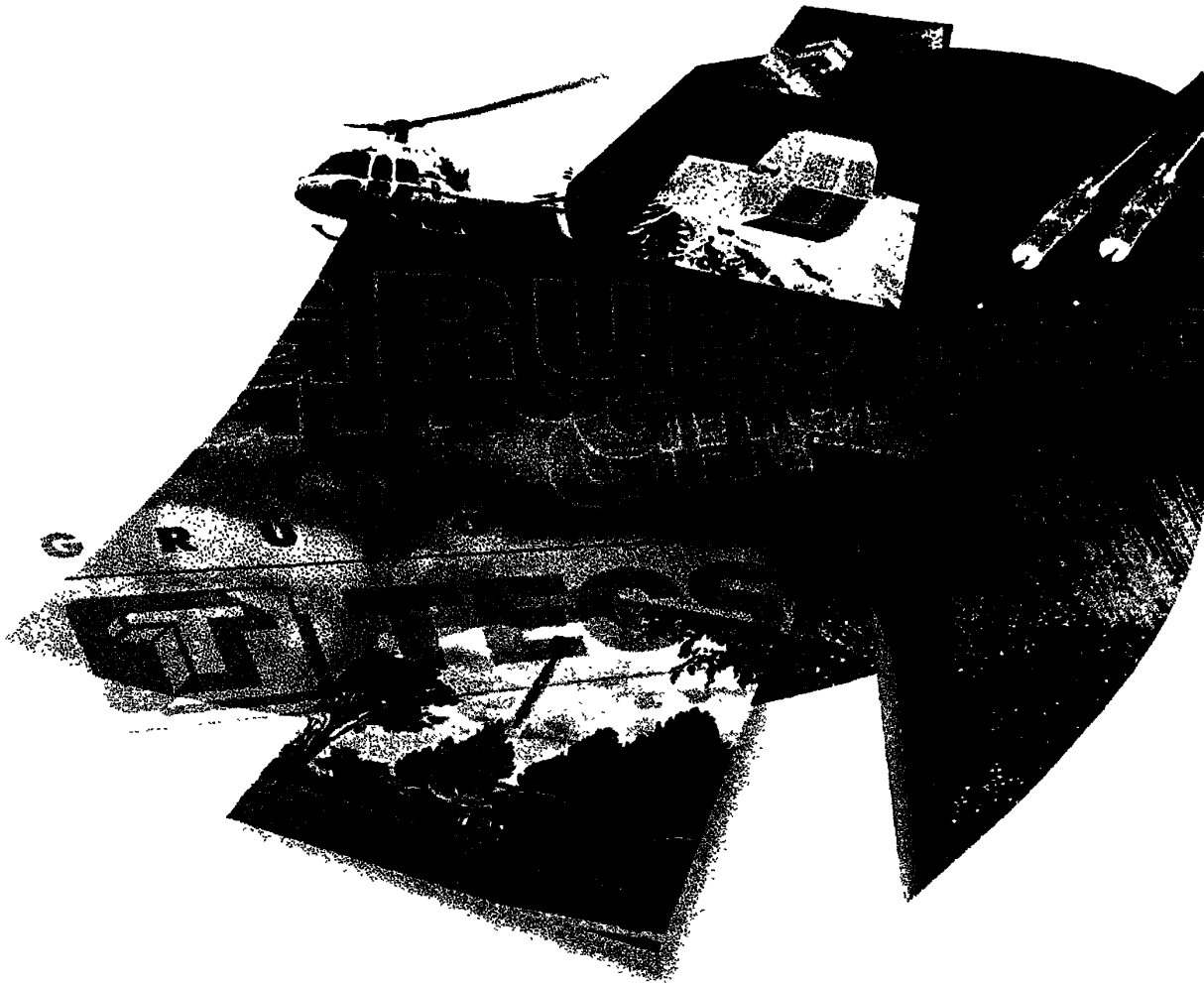
 **TECSAT[®]**

1985-2000

anos

TELESCAT





The TECSAT GROUP is a set of private capital Brazilian companies, and is located in São José dos Campos – São Paulo State. It consists of seven companies dedicated to the various branches in the Telecommunications sector. The industrial complex totalizes 38 thousand square meters built in a 673 thousand square meter area.

Founded in 1985, the TECSAT GROUP has more and more played an important role in the technological scenario: in little more than a decade, its companies have developed high tech, proven quality products, consonant with the new world trends. Its presence in the Brazilian market and its expansion within Mercosul certify the quality of its products and services.

Always pursuing the excellence in clients' support and development of its products, the TECSAT GROUP is fit to provide equipment and technological solutions to supply the demands of a competitive and constantly expanding market.



COMPANIES THAT MAKE UP THE GROUP

THE TECSAT GROUP CONSISTS OF VARIOUS COMPANIES ACTUATING IN THE TELECOMMUNICATIONS AREA

TECTELCOM – KNOW HOW IN TELECOMMUNICATIONS – it manufactures parabolic antennas, receivers, decoders, CATV systems, besides equipment for TVRO and MMDS systems, all ISO 9002 certified.

TECTELCOM AIRSPACE, a company dedicated to the development and manufacturing of electronic equipment for the airspace sector; it actuates particularly in the areas of Communication, Navigation Aids, Radars and Space. ISO 9001 certified; its products are intended to civil and military applications.

TECTELCOM OPTICAL FIBERS – one of the most modern optical fiber plants in South America, able to manufacture approximately 500,000 km fibers yearly, including mono mode and multi mode optical cables, all ISO 9002 and AQT (Atestado de Qualidade Telebrás – Telebrás Quality Certification) certified.

TECSAT INTERNET – a server that provides the user with quick access through high speed digital lines and links, offering top quality service to all Vale do Paraíba area.

TECTELCOM DA AMAZÔNIA – its industrial unit is located in Manaus; it includes complete infrastructure to manufacture electro-electronic equipment in high scale. Presently, it manufactures equipment for satellite reception and telephony and commercializes other TECSAT products.

TECSAT VIDEO – it is the newest satellite (DTH – Direct-to-Home) TV operator in Brazil, broadcasting over one hundred channels. It actuates also in the production of its own programming, besides providing Executive TV (TV Executiva) services and remote training sessions.

TECSAT DO NORDESTE located in Ilhéus, Bahia, - it is dedicated to the industrial activities for production and commercialization of satellite reception, informatics and electro-electronics, as well as DTH TECSAT TV all over the country. Also, it is capable of generating and distributing video/audio signals and data within the DTC TECSAT TV system, by making the production of specific programming for remote training and education feasible.

PRODUCTS



The continuous search for quality and functionality has turned the TECSAT GROUP into a reference within the market.

The companies in the TECSAT GROUP provide the most varied Products and Services, namely: In the consumer's area, the TVRO – TV Receiver Only equipment including parabolic antenna, receivers and decoders for satellite TV signals in the C and Ku bands, both analogical and digital, besides its own DTH TV receiver system.

In the professional line (Broadcasting), it manufactures UHF/VHF transmitters, microwave receivers/transmitters, Flyaway Systems and Mobile Units thoroughly fit for digital MPEG-2 DVB broadcasting.

In the airspace segment, it manufactures radio navigation and radio communication equipment, meteorological radars and radars for war aircraft applications, as well as satellite transponders.

By developing special projects for other companies, the TECSAT GROUP provides creative and high quality solutions, using analogical and digital executive TV for corporate networks (addressing or not), satellite remote

digital broadcasting (SNG) and VSAT – voice, data and fax bi-directional broadcasting.

Actuating in one of the most promising markets, the DTH TV, it has developed the required supporting elements for its own software and equipment with the purpose of delivering its clients a set of unique quality channels.

The TECSAT production line ranges from entire systems for DTH, MMDS or Cable TV services to simple TV mono-channel intended to tele broadcasting or Corporate Network. The already operating Digital Communication/TV Systems consist of concrete certification of the TECSAT integration and industrial capacity.

None but TECSAT with its wide experience in DTH, MMDS and Cable TV experience, proven both in Brazil and in some South American countries is able to provide the most modern and reliable DTH TV systems.

TECSAT, also known for its excellence in the after sales service is always at the clients' disposal to provide technical support and complete servicing on the systems it provides.



TECNOLOGY

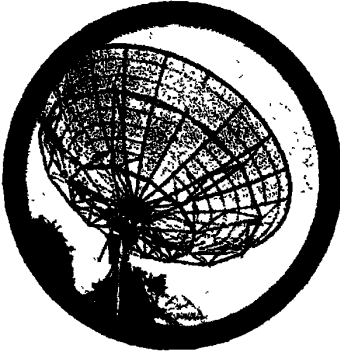


With investments of thousands of dollars yearly in research and development, the TECSAT GROUP counts on modern laboratories, fit with state-of-the-art accuracy equipment, testing and measuring devices, added to a highly qualified staff of engineers and technicians.

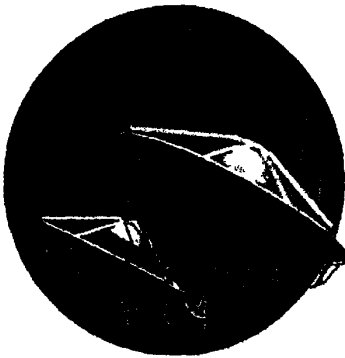
Besides, it uses the most advanced production technologies, including updated equipment for board assembly such as automatic machines for insertion of SMD and PTH components, capable of inserting up to 200,000 components per hour.

Attempt to the domestic and international market new trends and opportunities, the TECSAT GROUP has incorporated fast new products and services to its area of actuation, having developed its digital platform using home technology.

OPERATION CENTER – DTH



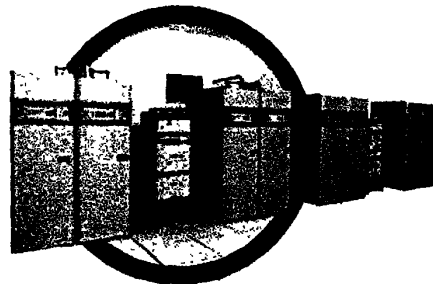
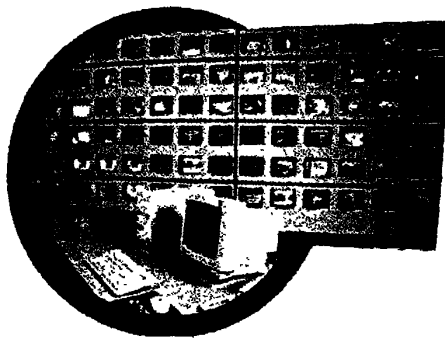
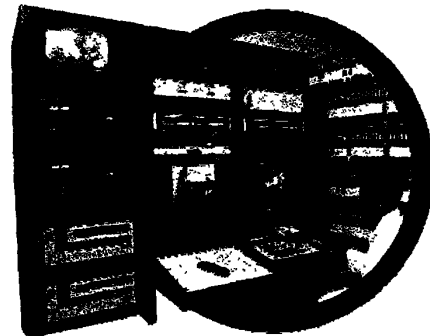
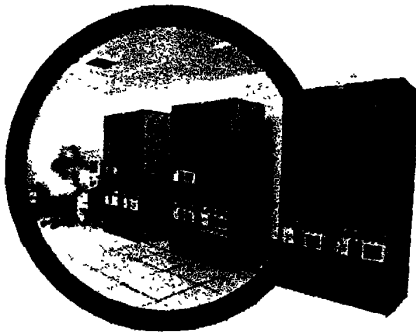
The TECSAT DTH System Operations Center is one of the Group largest undertakings and one of the most modern technological complexes in the DTH TV sector in Brazil. It includes a vast built area and houses equipment intended to receive, process and transmit the signals passing the TECSAT system, from radio broadcasting to image and data tele reporting for companies and corporate networks.



The Operation Center is responsible for the TECSAT DTH Up Link: a set of equipment to convey signals to the satellite, by means of own generators, monitoring and automatic redundancy covering all equipment.

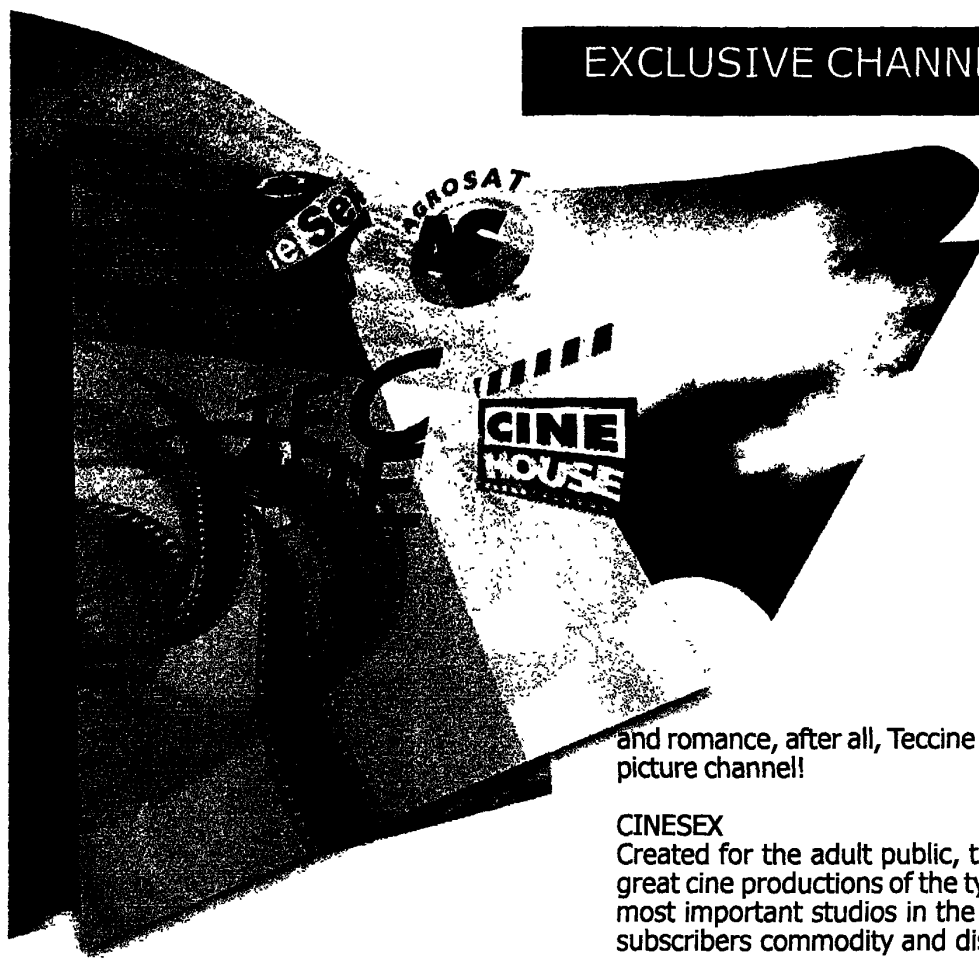


Adopting the MPEG2/DVB international technology standard, TECSAT transmits uninterruptedly to its users, a high quality digital signal.





EXCLUSIVE CHANNELS



TECSAT, by itself or associated to other companies, has created its own channels that permit it to offer quality alternative to the subscribers.

Part of the TECSAT packages, the Agrosat , 1 and 2 CineHouse, 1 and 2 Teccine, PenthouseTv and CineSex channels offer quality programming with focus to a specific and demanding audience.

AGROSAT

Focusing the country audience, shows programming that provides information not only on farming and cattle as well as on entertainment. Music, leisure, fishing, debates, documentaries, rodeos and movie pictures make up the station programming.

CINEHOUSE

Exclusive movie picture channel, shows the great movie classics and the most varied individual studio productions, within a programming segmented in special sessions covering the most varied kinds; suspense, infantile, romance , comic, epical, dramatic, terror, action.

TECCINE

A 24-hour movie picture channel with the best of the international movie. Classics, launchings, much action and adventure; suspense and terror, drama

and romance, after all, Teccine is a complete movie picture channel!

CINESEX

Created for the adult public, the channel exhibits great cine productions of the type, available at the most important studios in the sector, offering the subscribers commodity and discretion.

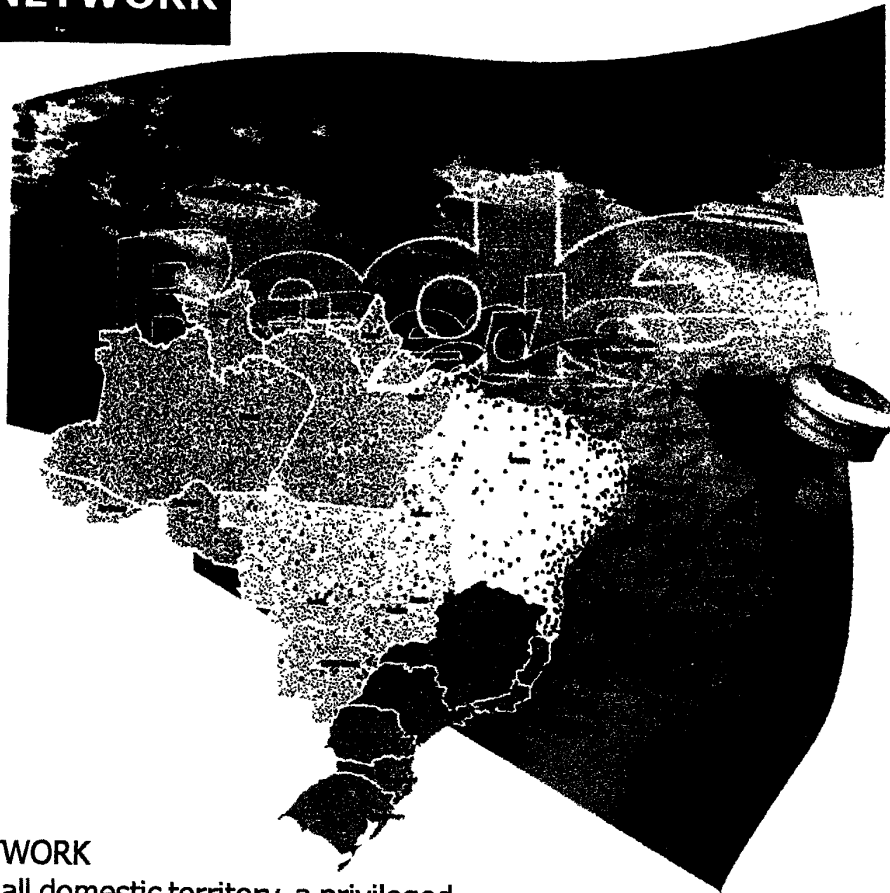
PENTHOUSE TV – The Penthouse Brazil Channel
Also with the focus on the adult public, this channel created under the Penthouse American magazine license is the first channel in the world to exhibit movie pictures and photographic essays belonging to the Penthouse Video collection.

Besides the referred channels, TECSAT has searched for market differentials and has been segmenting its programming still more. In an unprecedented and daring attitude, it has developed the Tele-instruction, Executive TV and remote training projects, among which it is worth mentioning the contract it has signed with Conselho Federal de Medicina – The Federal Council of Medicine with focus on medical updating through television. Resulting from this partnership a new specific channel was created and oriented towards the health professionals.

THE CFM TV – THE SCIENCE AND ETHICS CHANNEL

Backed by the Federal Council of Medicine, this constitutes an important tool for the continuous professional apprenticeship, exhibiting the most recent findings in the medicine field, thus favoring ethical discussions and sharing information among the medical community.

THE NETWORK



THE NETWORK

Covering all domestic territory, a privileged franchise and resale network is responsible for distributing and commercializing the TECSAT products and for installation and technical support. It comprises approximately 1,000 franchises and over 3,000 reselling spots, counting on qualified professionals and under continuous training process, able to support all TECSAT clients timely and efficiently.

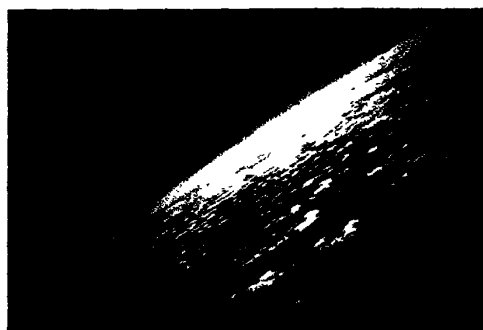
FRANCHISES

TECSAT has innovated by implementing a system of franchising that offers the small enterprises (resellers and installers) the opportunity to adapt to new commercial and institutional requirements in order to become an exclusive TECSAT product reseller. These companies practice the Group existing politics, besides displaying the TECSAT brand in its fantasy names, being responsible for the Group support and assistance in its area.

RESALES

Through its network of certified resellers and installers, the TECSAT products have gained the consumers' market, closing the product distributing cycle, from the production line to the consumer's home. These companies, backed on the TECSAT products quality and warranty, accomplish an excellent sale and after sale work, thus assuring the TECSAT Group a substantial market penetration.

The TECSAT franchising and reselling activity has assured in the course of the recent years, the sole leadership in the Band C market – accounting for over five million via satellite receivers, 50% in the domestic market share – and gaining in the shortest run, a significant market share in the Ku band DTH TV.



negocio
misión
visión
valores

integración de los sistemas y tecnología de información
conocimiento para el desarrollo sostenido
innovación para competir globalmente
excelencia y ética

negocio
misión
visión
valores

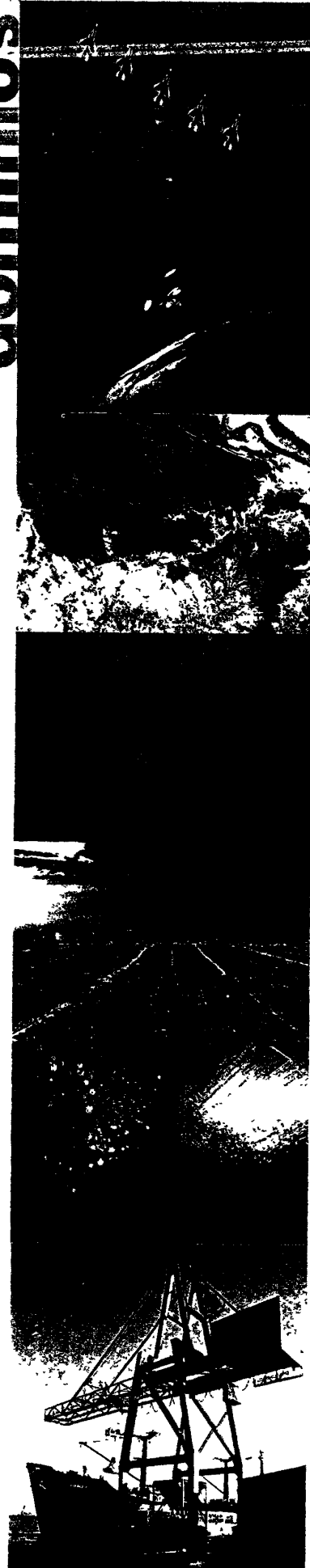
systems integration and information technology
knowledge for the sustainable development
innovation to compete globally
excellence and ethics

domínios

integración de los sistemas
sensibilidad remota
geoprocesamiento
modelado y simulación
mando del proceso
ingeniería simultánea

integração de sistemas
sensoriamento remoto
geoprocessamento
modelagem e simulação
controle de processos
engenharia simultânea

systems integration,
remote sensing
geo-processing
modeling and simulation
process control
simultaneous engineering



sistemas de defensa
sistemas de defesa
defense systems

aerospacial
aerospacial
air space

amazonia
amazônia
amazon

ciencias
medioambientales y
atmosféricas
ciências ambientais e
atmosféricas
atmospheric and
environmental sciences

energía
energia
energy

telecomunicaciones
telecomunicações
telecommunications

medios de transporte
meios de transporte
means of transportation

atuação

Embraer - CCSIVAM

Sivam / Sipam

Vigilancia y Protección de Amazonia

Surveillance and Protection of the Amazon

concepción y integración del sistema
modelado operativo y institucional
implementación de la infraestructura
implementación de la red de telecomunicaciones

Representa uno de los mayores y más complejos desafíos en la aplicación de tecnologías críticas. El sistema se dispone recoger, tratar y hacer disponibles las informaciones que permitan coordinar e integrar acciones para controlar y defender el territorio, el espacio aéreo y el medio ambiente, para dar apoyo al desarrollo sostenido y soberano de la Amazonia brasileña.

Atech hace la integración del proyecto y participa de la concepción, desarrollo e integración del sistema, del modelado operativo e institucional, así como del proyecto y de la implementación de la infraestructura y de la red de telecomunicaciones.

system conception and integration
institutional and operational modeling
infrastructure project and implementation
telecommunications network implementation

It represents one of the biggest and most complex challenges in the application of critical technologies. The system aims at collecting, handling and supplying information which may enable users to coordinate and integrate actions in order to control and defend the territory, the air space and the environment, thus providing support to the sustainable and supreme development of the Brazilian Amazon.

Atech is the system integration company participating in the system conception, development and integration, institutional and operational modeling, and also participates in the infrastructure project and implementation and telecommunications network.



ASMACS

Sistema de Gerenciamento y Control del Espacio Aéreo *Sistema de Controle e Gerenciamento do Espaço Aéreo*

*coordenación del tránsito aéreo
automatización del tratamiento y visualización de datos radar
acompañamiento de vuelos militares y misiones*

Asmacs es un producto destinado a la administración y control del tránsito aéreo en las áreas civil y militar. Proyectado para apoyar y automatizar los procedimientos involucrados en la coordinación y control del tránsito aéreo civil en las áreas terminales y en ruta, contribuye con la seguridad aérea atendiendo a criterios internacionales. En el área de defensa, el sistema ayuda en el acompañamiento de vuelos militares y misiones, como la intercepción de aeronaves.

Asmacs es la solución brasileña adoptada por el Comando de Aeronáutica para la automatización del tratamiento y la visualización de los datos radar en los principales centros brasileños de control del tránsito aéreo. Está en operación en las áreas terminales de Rio de Janeiro, São Paulo y Brasilia y en el centro de control de área en Manaus.

*coordenação do tráfego aéreo
automatização do tratamento e visualização de dados radar
acompanhamento de vôos militares e missões*

Asmacs é um produto destinado ao gerenciamento e controle do tráfego aéreo nas áreas civil e militar. Projetado para apoiar e automatizar os procedimentos envolvidos na coordenação e controle do tráfego aéreo civil nas áreas terminais e em rota, contribui para a segurança aérea atendendo padrões internacionais. Na área de defesa, o sistema auxilia o acompanhamento de vôos militares e missões, como a intercepção de aeronaves.

Asmacs é a solução brasileira adotada pelo Comando da Aeronáutica para a automatização do tratamento e visualização dos dados radar nos principais centros brasileiros de controle do tráfego aéreo. Está em operação nas áreas terminais do Rio de Janeiro, São Paulo e Brasília e no centro de controle de área em Manaus.



Estação Espacial Internacional

Programa Brasileiro para la Estación Espacial Internacional

Brazilian Program for the International Space Station

gestión de configuración de software
garantía de calidad de software

Originase de un acuerdo entre Brasil y Estados Unidos, para proyectar, desarrollar, operar y usar equipamientos de vuelo y cargas útiles para el Programa de la Estación Espacial Internacional. Atech provee servicios de análisis y consultoría en el área de gestión de configuración y de garantía de calidad, de acuerdo con los requisitos establecidos por la NASA, para el software presente en los equipamientos que componen la Estación Espacial y que son provistos por la industria aeroespacial brasileña.

software configuration management
software quality assurance

Originates from an agreement between Brazil and the United States, about the project, development, operation and use of flight equipment and payload to the International Space Station Program. Atech provides analysis and consulting services in configuration management and quality assurance, in compliance with the requirements established by NASA, for the software present in the equipment that compose the International Space Station and that are provided by the Brazilian aerospace industry.



Veículo Lançador de Satélites

Banco de Control del Vehículo Lanzador de Satélites

Banco de Controle do Veículo Lançador de Satélites

Satellites Launcher Vehicle Control Data Base

teste y monitoreo de los subsistemas de bordo

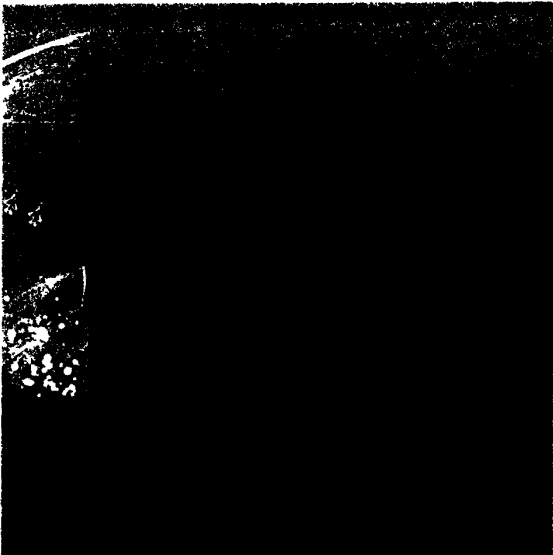
El Banco de Control del Vehículo Lanzador de Satélites - BCVLS - es un sistema de apoyo utilizado durante las fases de pruebas en tierra y preparación del vehículo para lanzamiento. Tiene a su cargo testar, monitorear, activar y desactivar los subsistemas de bordo del Vehículo Lanzador de Satélites Integrada a la Misión Espacial Completa Brasileña, Atech desarrolló este sistema y viene participando de las campañas de lanzamiento del VLS, desde 1997

teste e monitoramento de subsistemas de bordo

O Banco de Controle do Veículo Lançador de Satélites - BCVLS - é um sistema de apoio utilizado durante as fases de testes no solo e preparação do veículo para lançamento. É responsável por testar, monitorar, ativar e desativar os subsistemas de bordo do Veículo Lançador de Satélites Integrada à Missão Espacial Completa Brasileira, a Atech desenvolveu este sistema e tem participado das campanhas de lançamento do VLS, desde 1997

testing and monitoring of the onboard subsystems

The Satellites Launcher Vehicle Control Data Base - BCVLS - is a support system used during the test phases on the ground and vehicle preparation for launching. It is in charge of testing, monitoring, activating and deactivating the onboard subsystems of the Satellite Launcher Vehicle. Together with the Brazilian Complete Space Mission, Atech developed this system and has participated in the VLS launching campaigns, since 1997.



Patrimônio da União

Sistema de Gestão Patrimonial

Asset Management System

sensibilidad remota
geoprocesamiento
modelado y integración de la arquitectura funcional

Proyecto piloto para modernizar el sistema de administración del patrimonio de la Unión, que incluye la definición, especificación, modelado e integración de la arquitectura funcional, con tecnologías de geoprocesamiento e interpretación de imágenes de sensibilidad remota.

Inicialmente, el sistema se aplicará e implantará en el área portuaria. Este modelo deberá indicar las funcionalidades más adecuadas y la estrategia para la posterior implantación de prototipos en los puertos de Santos y Sepetiba. El control operativo se efectuará a partir de sistemas computacionales implantados en dichas localidades, en la sede de la Secretaría de Patrimonio de la Unión en Brasilia y en las Delegaciones Regionales de Rio de Janeiro y São Paulo.

remote sensing
geo-processing
modeling and integration of the functional architecture

Pilot project to update the management system of the Union Asset, including definition, specification, modeling and integration of the functional architecture, applying technologies of geo-processing and remote sensing image interpretation.

At first the system will be applied and implanted in the port area. This model shall indicate the most appropriate functionalities and the strategies for future implantation of prototypes in the ports of Santos and Sepetiba. The operational control will be performed through computer systems implanted in these localities, in the Union Asset Secretary headquarters in Brasilia and in the Regional Departments in Rio de Janeiro and São Paulo.

AMHS

Sistema de Administración de Mensajes Aeronáuticos *Sistema de Gerenciamento de Mensagens Aeronáuticas* Aeronautical Messages Handling System

generación, consistencia y ruteo de mensajes

AMHS es un producto destinado a la administración de los mensajes aeronáuticos que circulan a través de redes públicas y privadas conectadas a la red AFTN (Aeronautical Fixed Telecommunication Network), con el objetivo de dar apoyo a las crecientes necesidades de telecomunicaciones en el tránsito aéreo. El sistema ofrece servicios de generación, consistencia y ruteo de mensajes, de forma rápida y confiable, de acuerdo con recomendaciones de la Internacional Civil Aeronautical Organization - Icao. AMHS está en operación en el Centro de Conmutación Automática de Mensajes (CCAM) de Brasilia con concentradores remotos instalados en Curitiba, Manaus y Recife

geração, consistência e roteamento de mensagens

AMHS é um produto destinado ao gerenciamento das mensagens aeronáuticas que trafegam através de redes públicas e privadas conectadas a rede AFTN (Aeronautical Fixed Telecommunication Network), com o objetivo de dar suporte às crescentes necessidades de telecomunicações no tráfego aéreo. O sistema provê serviços de geração, consistência e roteamento de mensagens, de forma rápida e confiável, de acordo com recomendações da Internacional Civil Aeronautical Organization - Icao. AMHS está em operação no Centro de Comutação Automática de Mensagens (CCAM) de Brasília com concentradores remotos instalados em Curitiba, Manaus e Recife



AMET

Sistema de Informaciones Metereológicas *Sistema de Informações Metereológicas* Meteorological Information System

informaciones meteorológicas para
la navegación aérea

AMET es un producto creado para almacenar y hacer disponibles informaciones meteorológicas para ayudar a la navegación aérea; que está conectado a la red internacional AFTN (Aeronautical Fixed Telecommunication Network). El sistema analiza los mensajes recibidos, actualiza su banco de datos y provee informaciones a sus usuarios a través de solicitudes de consulta y/o difusión automática de informaciones. AMET trata mensajes del tipo Metar, TAF, Sigmet, Airmet y otros. El acceso a su banco de datos pueden efectuarlo los usuarios de la red AFTN o de redes meteorológicas específicas. AMET está instalado y en operación en el Centro Regional de Previsión de Área (CRPA) de Brasilia.

informações meteorológicas para
a navegação aérea

AMET é um produto criado para armazenar e disponibilizar informações meteorológicas para auxiliar a navegação aérea, estando conectado à rede internacional AFTN (Aeronautical Fixed Telecommunication Network). O sistema analisa as mensagens recebidas, atualiza seu banco de dados e fornece informações aos seus usuários através de solicitações de consulta e/ou difusão automática de informações. AMET trata mensagens do tipo Metar, TAF, Sigmet, Airmet e outras. O acesso ao seu banco de dados pode ser realizado pelos usuários da rede AFTN ou de redes meteorológicas específicas. AMET está instalado e em operação no Centro Regional de Previsão de Área (CRPA) de Brasília

meteorological information to
assist air navigation

AMET is a product created to store and provide meteorological information to assist air navigation. It is connected to the international network AFTN (Aeronautical Fixed Telecommunication Network). The system analyses the received messages, updates its data base and provides information to its users through inquiry requirements and/or information automatic transmission. AMET handles the following kinds of messages: Metar, TAF, Sigmet, Airmet among others. AFTN network users and specific meteorological network users are entitled to access AMET's data base. AMET is installed and fully operational at the Regional Area Forecast Center (RAFC) in Brasilia.



Agenda 21

Políticas para el Desarrollo Sostenido

Políticas para el Desarrollo Sostenido

desarrollo sostenido

Iniciativa del Ministerio de Medio Ambiente con el apoyo del Programa de las Naciones Unidas para el Desarrollo (PNUD), comprende un conjunto de acciones para explicitar la política nacional para el desarrollo sostenido y la preservación del medio ambiente, atendiendo al compromiso firmado en la ECO-92, en Río de Janeiro, conocido como Agenda 21 brasileño. Atech participó de la movilización y moderación de los debates entre actores públicos y privados y en la producción y consolidación del documento que trata del tema "Agricultura sostenida", en consorcio con el Procam-USP (Programa de Posgrado en Ciencias Ambientales de la Universidad de São Paulo) y con el Museo Paraense Emilio Goeldi, siguiendo la metodología definida por la Comisión Interministerial de Políticas de Desarrollo Sostenido.

sustainable development

Environment Ministry initiative with support from the United Nations Program for the Development (PNUD), it comprises a number of actions to explicit the national policy for the sustainable development and the environment preservation; in compliance with the commitment agreed upon at the ECO-92, in Rio de Janeiro, known as the Agenda 21.

Atech took part in the mobilization and moderation of debates between public and private institutions as well as the elaboration and consolidation of the document about the theme "Sustainable agriculture", in a consortium with Procam-USP (Post-Graduation Program in Environmental Sciences) and Museu Paraense Emilio Goeldi, following methodology outlined by the Sustainable Development Policies Interministerial Committee.

Eixos da Amazônia

Planeamiento Nacional
Planejamento Nacional
National Planning



identificación de portfolio de proyectos
banco de datos georreferenciados

Desarrollado en conjunto por el Ministerio de Presupuesto, Planeamiento y Gestión y por el BNDES, el trabajo "Oportunidades de Inversión Pública y/o Privada en los Ejes Nacionales de Integración y Desarrollo"; incluyó la identificación de un portfolio de proyectos en infraestructura económica, desarrollo social, medio ambiente, información y conocimiento, además de un banco de datos georreferenciados. Atech fue la responsable por el portfolio de los "Ejes de Amazonia", el Madeira-Amazonas e el Arco Norte, como integrante de un consorcio liderado por Boaz-Alien & Hamilton, Bechtel Co. e ABN AMRO Bank. El estudio sirvió de base de apoyo al Plan Plurianual - PPA 2000-2003 del Gobierno Federal brasileño.

identificação de portfolio de projetos
banco de dados georreferenciados

Desenvolvido em conjunto pelo Ministério do Orçamento, Planejamento e Gestão e o BNDES, o trabalho "Oportunidades de Investimento Público e/ou Privado nos Eixos Nacionais de Integração e Desenvolvimento" envolveu a identificação de um portfolio de projetos em infra-estrutura econômica, desenvolvimento social, meio ambiente, informação e conhecimento, além de um banco de dados georreferenciados. A Atech foi a responsável pelo portfolio dos "Eixos da Amazônia", o Madeira-Amazonas e o Arco Norte, como parceira em um consórcio liderado por Boaz-Alien & Hamilton, Bechtel Co. e ABN AMRO Bank. O estudo serviu de subsídio ao Plano Plurianual - PPA 2000-2003 do Governo Federal.

identification of a portfolio of projects
geo-referenced database

The project "Opportunities for Private and for Public Investment in the National Development and Integration Axis" has been developed by the Management, Planning and Budget Ministry and the BNDES (National Bank of Social and Economical Development). It involved the positive identification of a portfolio of projects comprising economical infrastructure, social development, environment, information and knowledge, in addition to a geo-referenced database.

Atech undertook the "Amazon Axis" portfolio, the Madeira-Amazonas and the Arco Norte, as partner in a consortium led by Boaz-Alien & Hamilton, Bechtel Co. and ABN AMRO Bank. This study serves as a subsidy to the Pluriannual Plan - PPA 2000-2003 of the Federal Government.

Atende

Sistema de Atención de Denuncias
Sistema de Atendimento de Ocorrências
Fault Responding System



identificación de problemas en la red eléctrica
agrupamiento y selección de informaciones
diagnóstico de defecto

Sistema integrado de atención y administración de denuncias de defectos en la red eléctrica. Tiene el objetivo de aumentar la calidad de la atención a los usuarios de Eletropaulo Metropolitana (compañía proveedora de energía eléctrica de São Paulo, Brasil), proporcionando más seguridad, agilidad y precisión en la identificación de problemas en la red eléctrica. En caso de gran volumen de solicitudes, oriundas de una misma región, el sistema realiza el agrupamiento y la selección de las informaciones para la identificación de la denuncia, efectúa el diagnóstico de defecto probable y transmite la información al centro regional, que accionará el equipo de emergencia.

identificação de problemas na rede elétrica
agrupamento e triagem de informações
diagnóstico de defeito

Sistema integrado de atendimento e gerência de ocorrências de defeitos na rede elétrica, objetiva aumentar a qualidade do atendimento aos usuários da Eletropaulo Metropolitana, proporcionando mais segurança, agilidade e precisão na identificação de problemas na rede elétrica. Em caso de grande volume de solicitações, oriundas de uma mesma região, o sistema realiza o agrupamento e a triagem das informações para a identificação da ocorrência, realiza o diagnóstico do defeito provável e transmite a informação ao centro regional, que acionará a equipe de emergência.

identification of problems in the electrical network
grouping and sorting of information
diagnosis of the imperfection

Integrated system for response and management of electrical network fault occurrences. It aims at improving the quality of response to Eletropaulo Metropolitana users, providing more safety, agility and accuracy in the identification of problems in the electrical network.

Whenever there's a big number of calls, originated in the same region, the system performs the grouping and sorting of the information for the fault identification, as well as the diagnosis of the probable imperfection and sends the information to the regional center, which will dispatch the emergency team.

conocimiento

Concepción, especificación, desarrollo, integración e implantación de sistemas y estructuras de apoyo
Variados sensores, plataformas e interfaces
Gestión, análisis y fusión de informaciones
Administración de bases de datos complejas
Operación y mantenimiento evolutivo de centros de control
Investigación y desarrollo de tecnologías correlacionadas

conhecimento

Concepção, especificação, desenvolvimento, integração e implantação de sistemas e estruturas de suporte
Variados sensores, plataformas e interfaces
Gestão, análise e fusão de informações
Gerenciamento de bases de dados complexas
Operação e manutenção evolutiva de centros de controle
Pesquisa e desenvolvimento de tecnologias correlatas

knowledge

Conception, specification, development, integration and implementation of systems and support structures
Various sensors, platforms and interfaces
Information management, analysis and fusion
Complex database management
Control centers operation and evolution maintenance
Research and development of correlated technologies



patrimonio humano

Más de ciento cincuenta profesionales especializados componen el patrimonio de conocimiento de Atech. Son ingenieros, biólogos, geógrafos, arquitectos, físicos, matemáticos, analistas de sistemas y economistas.
Una experiencia multidisciplinaria para proveerle al Cliente la mejor solución tecnológica en nuestros áreas de dominio.

patrimônio humano

Mais de cento e cinquenta profissionais especializados compõem o patrimônio de conhecimento da Atech. São engenheiros, biólogos, geógrafos, arquitetos, físicos, matemáticos, analistas de sistema e economistas.
Uma experiência multidisciplinar para fornecer ao Cliente a melhor solução tecnológica nas nossas áreas de domínio.

human asset

Over a hundred and fifty specialized professionals integrate Atech's knowledge asset. They are engineers, biologists, geographers, architects, physicists, mathematicians, system analysts and economists.
A multi-disciplinary experience to provide the Customer with the best technological solution in our domain areas.

ABN AMRO Bank
Bechtel Co
Booz Allen & Hamilton
Climatempo
Compañía de Investigación de Recursos Minerales
Ecológica Planeamiento de Desarrollo Ambiental
Embraer S.A.
Ericsson AB
Fundación Getulio Vargas
Instituto del Hombre y Medio Ambiente de Amazonia
Instituto Socioambiental
Museo Paraense Emilio Goeldi
Programa de Posgrado en Ciencias Ambientales PROCAM-USP
Raytheon Co.
Regional Center of Transfer Technology (Nasa)
Universidad Federal de Uberlândia
Universidad Federal de Viçosa

Banco Nacional de Desarrollo Económico y Social BNDES, Brasil
Eletropaulo Metropolitana, São Paulo, Brasil
Embraer S.A., Brasil
Ministerio de Defensa de Brasil, Comando de Aeronáutica
Comisión de Implantación del Proyecto SIVAM (CCSIVAM)
Comisión de Implantación del Sistema de Control del Espacio Aéreo (CISCEA)
Dirección de Electrónica y Protección al Vuelo (DEPV)
Centro Tecnológico de Aeronáutica (CTA)
Instituto de Aeronáutica y Espacio (IAE)
Ministerio de Justicia, Brasil, Departamento de Policía Federal
Ministerio de Medio Ambiente, Brasil, Programa de las Naciones Unidas para el Desarrollo
Ministerio de Planeamiento, Presupuesto y Gestión, Brasil
Secretaría de Patrimonio Nacional, Brasil
The Mitre Co.

Companhia de Pesquisa de Recursos
Ecológica Planeamento de Desenvolvimento Ambiental
Embraer S.A.
Fundação Getúlio Vargas
Instituto do Homem e Meio Ambiente da Amazônia
Instituto Socioambiental
Museu Paraense Emílio Goeldi
Programa de Pós-Graduação em Ciências Ambientais
PROCAM-USP
Raytheon Co.
Regional Center of Transfer Technology (Nasa)
Universidade Federal de Uberlândia
Universidade Federal de Viçosa

Banco Nacional de Desenvolvimento Econômico e Social BNDES
Eletropaulo Metropolitana, São Paulo
Embraer S.A.
Ministério de Defesa, Comando da Aeronáutica
Comissão de Implantação do Projeto SIVAM (CCSIVAM)
Comissão de Implantação do Sistema de Controle do Espaço Aéreo (CISCEA)
Diretoria de Eletrônica e Proteção ao Voo (DEPV)
Centro Tecnológico de Aeronáutica (CTA)
Instituto de Aeronáutica e Espaço (IAE)
Ministério da Justiça, Departamento de Polícia Federal
Ministério do Meio Ambiente, Programa das Nações Unidas para o Desenvolvimento
Ministério do Planejamento, Organização e Gestão
Secretaria do Patrimônio Nacional
The Mitre Co.

ABN AMRO Bank
Bechtel Co
Booz Allen & Hamilton
Climatempo
Research Company for Mineral Resources
Ecológica Environmental Development Planning
Embraer S.A.
Ericsson AB
Getúlio Vargas Foundation
Man and Environment Institut for Amazon
Social-environmental Institute
Emilio Goeldi Paraense Museum
Post-Graduation Program in Environmental Sciences
PROCAM-USP
Raytheon Co.
Regional Center of Transfer Technology (Nasa)
Federal University of Uberlândia
Federal University of Viçosa

National Bank of Social and Economical Development BNDES
Eletropaulo Metropolitana, São Paulo
Embraer S.A.
Defense Ministry, Aeronautic Command
The SIVAM Project Implementation Committee (CCSIVAM)
Air Space Control System Implantation Committee (CISCEA)
Flight Protection and Electronics Department (DEPV)
Aeronautic Technological Center (CTA)
Space and Aeronautic Institute (IAE)
Justice Ministry, Federal Police Department
Environmental Ministry, United Nations Program for Development
Planning, Budget and Management Ministry
Union Asset Secretary
The Mitre Co.

DALLAS   BOSTON
 MIAMI

 MANAUS

 SÃO PAULO

La Fundación de Aplicaciones de Tecnologías Críticas - Atech se creó en 1997, para ser parte de SIVAM. Es una entidad jurídica de derecho privado, sin los extremos lucrativos, instituida en los términos de los géneros 24 y siguientes del Código Civil brasileño.

A Fundação de Aplicações de Tecnologias Críticas - Atech foi criada em 1997, para ser integrante do SIVAM. É uma entidade jurídica de direito privado, sem os extremos lucrativos, instituída nos termos dos artigos 24 e seguintes do Código Civil Brasileiro.

The Applications of Critical Technologies Foundation - Atech was created in 1997, to be part of SIVAM. It is a juridical entity of private right, without lucrative ends, instituted in the terms of the goods 24 and following of the Brazilian Civil Code.



FUNDAÇÃO APLICAÇÕES DE TECNOLOGIAS CRÍTICAS

São Paulo 0XX11 5091 6300

Manaus 0XX92 624 2525

www.atech.br

AmazonTech

Amazon Technologies Co

Boston 00XX1 781 938 5500 ext 230

Dallas 00XX1 972 783 4666 ext 221

Miami 00XX1 352 377 0180

www.amazontech.com