ACM SIGAda 2003 Welcome

Currie Colket
ACM SIGAda Chair


San Diego International Airport (Lindbergh Field)
San Diego Bay
Balboa Park
Balboa Naval Hospital
San Diego High School
San Diego City College
Santa Fe Depot
B Street Pier
Broadway Pier
Navy Pier
G St. Pier
Horton Plaza
Seaport Village
Convention Center
Convention Center Expansion
Ball park Site
Coronado
0
0.25
0.5
Miles
Centre City and Surrounding Area Neighborhoods
A Little Italy
B Cortez
C Columbia
D Core
E Horton Plaza
F Marina
G Gaslamp
H East Village
I Banker's Hill
J Golden Hill
K Sherman Heights
L Logan Heights
M Barrio Logan
Downtown Redevelopment District
Trolley Line
Neighborhood Boundaries
Sports Entertainment District
AERIAL FOTOBANK
A Division of Landiscor
(858) 455-0780 www.landiscor.com
Date of Photo: 5-13-02

Overview of Presentation

- What is Ada?
- What is ACM?
- What is SIGAda?
- Introduction of SIGAda Officers
- How Not to do Systems Engineering
- Ada Engineered Products
- Common Characteristics of Ada Applications
- Future of Ada

What Is Ada?

What Is Ada?

- An internationally standardized language designed for *large-scale*, *long-lived real-time / embedded applications* where *reliability is critical*

Originally designed by a team led by Jean Ichbiah in the early 1980's ⇨ Ada 83

- Pascal + packages + exceptions + tasking + generics

Revised by a team led by S. Tucker Taft in the early 1990's ⇨ Ada 95

- Ada 83 + OOP + child libraries + protected objects
- Also: generalized "pointers", richer API interfacing, "Specialized Needs" annexes

Revision Process started for ~2005 ⇨ Ada 05 | Ada 0X

Ada is a Language for Building Industrial Strength Systems

What Is the ACM?

What Is ACM?

- Association for Computing Machinery
- World's oldest and largest scientific computing society
- A major force in advancing the skills and knowledge of Information Technology professionals since 1947
- Has approximately 75,000 members worldwide
- Valuable resource for rapidly changing IT field
- Approximately 30 Special Interest Groups

SIGs in General ⇨

- Keep you up to date with the latest technical developments
- Provide focused resources and forums for discussion
- Help you network with colleagues outside your immediate workshop

What Is SIGAda? - 1

What Is SIGAda?

- Special Interest Group in the Ada Programming Language; formed in 1981; ~ 500 members today
- Dedicated to all aspects of the Ada Language
- Played a significant role in the evolution of the Ada Standard:
  - Ada Language Issues Working Group (ALIWG)
  - Performance Issues Working Group (PIWG)
  - Numeric Working Group (NUMWG)
  - Ada Run Time Environment Working Group (ARTEWG)
  - Ada Semantic Interface Working Group (ASIS)
- Played a significant in educating the Ada community
  - Education Working Group (EDWG)
  - Application Program Interface (API) WG (APIWG)

What Is SIGAda? - 2

What Is SIGAda? (continued)

- Work with the Ada Community for Ada Advocacy
  - SIGAda Local Chapters
  - Ada Advocacy Booth
- Publish Ada Letters quarterly
- Cooperate with the Ada International Community
  - Ada-Europe, Japan, ISO/IEC JTC1/SC22 WG9
- Formal Approved Category C Liaison with WG9
  - Important benefit of SIGAda membership
- Provide a wealth of Ada information on our home page => ***http://www.acm.org/sigada***
- Conduct the annual SIGAda Conference

Membership is Valuable for your Professional Development

We welcome volunteers who want to get involved

What Are the Benefits of SIGAda Membership?

Benefits of SIGAda Membership ⇨

Be part of a powerful resource for the software community's ongoing understanding of the scientific, technical, and organizational aspects of the use, standardization, environments, and implementations of the Ada language.

Keep you up to date with the latest Ada-related technical developments.

Provide you with focused resources and forums for discussion on Ada issues.

Help you network with colleagues outside your immediate employ.

Provide you with opportunities to help evolve the Ada language.

Provide you with opportunities to help benefit the entire Ada community.

Provide you with opportunities to help advance your professional career.

Provide you with an annual International SIGAda Conference dedicated to Ada technologies with reduced registration rates.

Provide you with a quarterly professional newsletter, ACM Ada Letters, in print, with on-line access, which is the best way to stay current on Ada and Ada community happenings.

Provide you with notification of conferences, through mail and the SIGAda electronic member mailing list.

Provide you with access to all SIGAda material in the ACM Digital Library.

SIGAda Officers

Original Term:	**1 July 01- 30 June 03**
Reaffirmed for:	**1 July 03- 30 June 05**
Chair:	**Currie Colket**
Vice Chair for Meetings and Conferences:	**David Harrison**
Vice Chair for Liaison:	**Ann Brandon**
Treasurer:	**John McCormick**
Secretary:	**Clyde Roby**
International Representative	**Jean-Pierre Rosen**
Past Chair	**Ben Brosgol**

Elections Planned for early 2005

Contact Ben Brosgol if interested in running

How Not To Do Systems Engineering And The Sinking Of The Largest Offshore Oil Platform

March 2001

Disclaimer:
Slides Received From Unknown Author


For those of you who may be involved in the engineering of systems

Please read this quote from a Petrobras executive,


extolling the benefits of
cutting quality assurance
and inspection costs,


on the project that
sunk into the Atlantic
Ocean off the coast of
Brazil in March 2001.

"Petrobras has established new global benchmarks for the generation of exceptional shareholder wealth

through an aggressive and innovative programme of cost cutting on its P36 production facility.


Conventional constraints have been successfully challenged

and replaced with new paradigms appropriate to the globalised corporate market place.


Through an integrated network
of facilitated workshops,

the project successfully rejected the established constricting and negative influences of prescriptive engineering,

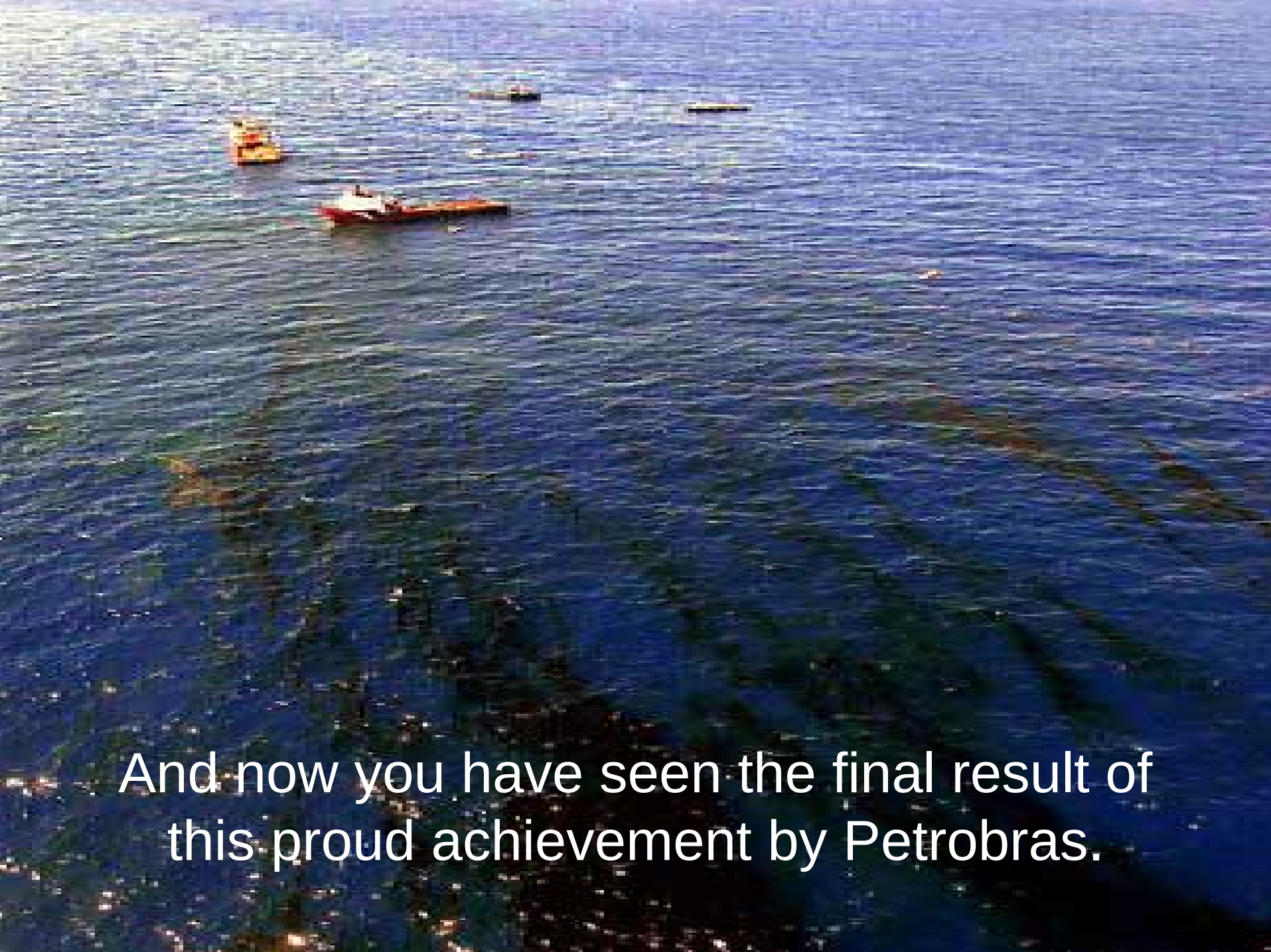
onerous quality requirements, and outdated concepts of inspection and client control.

Elimination of these unnecessary straitjackets has empowered the project's suppliers and contractors to propose highly economical solutions,


with the win-win bonus of enhanced
profitability margins for themselves.

The P36 platform shows the shape of things to come


in unregulated global market economy of the 21st Century.”


And now you have seen the final result of this proud achievement by Petrobras.

Ada Engineered Products (1)

LAMPS SH-60R ASW Helicopter

Ada Engineered Products (2)
Boeing 777 Commercial Aviation

Airbus 320
Airbus 330
Airbus 340
Beechjet 400A
Beech Starship I
Beriev BE-200
Boeing 737
Boeing 747
Boeing 757
Boeing 767
Boeing 777
Canadair Regional Jet
Embraer CBA-123
Embraer CBA-145
Fokker F-100
Ilyushin 96M
LM Hercules
Saab 2000
Tupolev TU-204

Ada Engineered Products (3)

Canal+ Interactive Television

CANAL+ TECHNOLOGIES is the world's leading provider of digital broadcasting and interactive TV software solutions. Its field-proven systems are being used by more than 20 different digital operators and over 15.7 million set-top boxes based on its technologies are currently deployed.

[Up from 4.7 million in 2001]

Ada Engineered Products (4)

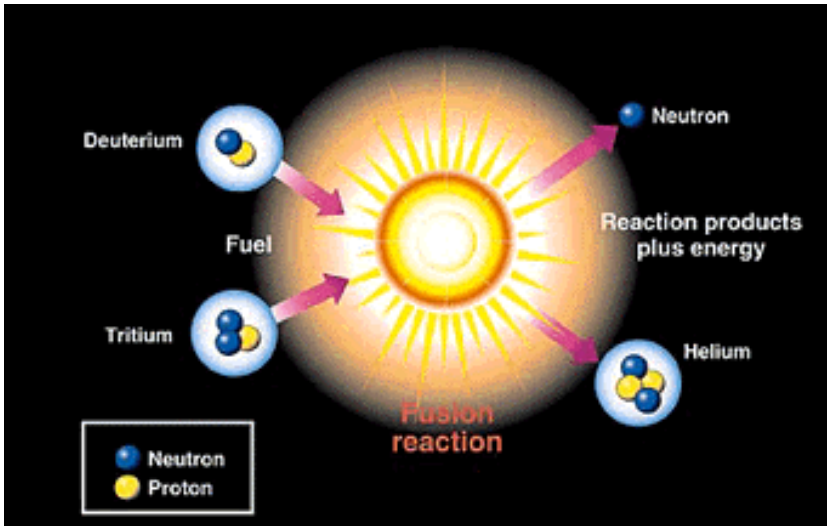
Hertz Neverlost

Ada Engineered Products (5)

70’Kingcat M270 Luxury Power Catamaran

Ada Engineered Products (6)

National Ignition Facility



Inertial Confinement Fusion

192 Lasers (510 Meters Path)

1.8 megajoules

Tiny Target – 600 µm diameter

At Lawrence Livermore National Laboratory

Ada Engineered Products (7)

NASA Space Systems

Ada Engineered Products (8)
Enroute Automation Modernization

$2,000,000,000.00 Contract

Awarded to Lockheed Martin in March 2003

Modernization program to update hosts for FAA Air Traffic Control

Estimate 1.2 MSLOC with the majority in Ada☺

Reuse of ~ 500K Ada SLOC for DSR/URET Programs

Common Characteristics of Ada Applications

- Reliability is a real concern
- Control safety or mission critical applications
- Control hard real-time or near real-time application
- Reliability is a real concern
- Control highly distributed systems
- Control systems with multiple interfaces
- Reliability is a real concern

Achieved via a sound systems engineering approach

With the Ada Language as a Key Technology

Future of Ada - Optimistic on Ada

Ongoing requirements for languages that support industrial strength engineering solutions

Ada language meets the requirements that it was originally designed to satisfy

- **Large-scale, long-lived, high-integrity real-time embedded applications**

Ada survived the period when it was most at risk

- **1997-98, after the closing of the AJPO**
- **Ada usage appears on the rise**
- **Ada is expanding into new domains**

Technology is mature

I'm Upbeat on Ada
Ada Really Works

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