



The Aerospace Corporation

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Office of Technical and Scientific Computing

The Aerospace Corporation

Created by Congress in 1960

Nonprofit corporation
Purpose is purely technical

Operates a federally funded research
and development center for the U.S.
Air Force

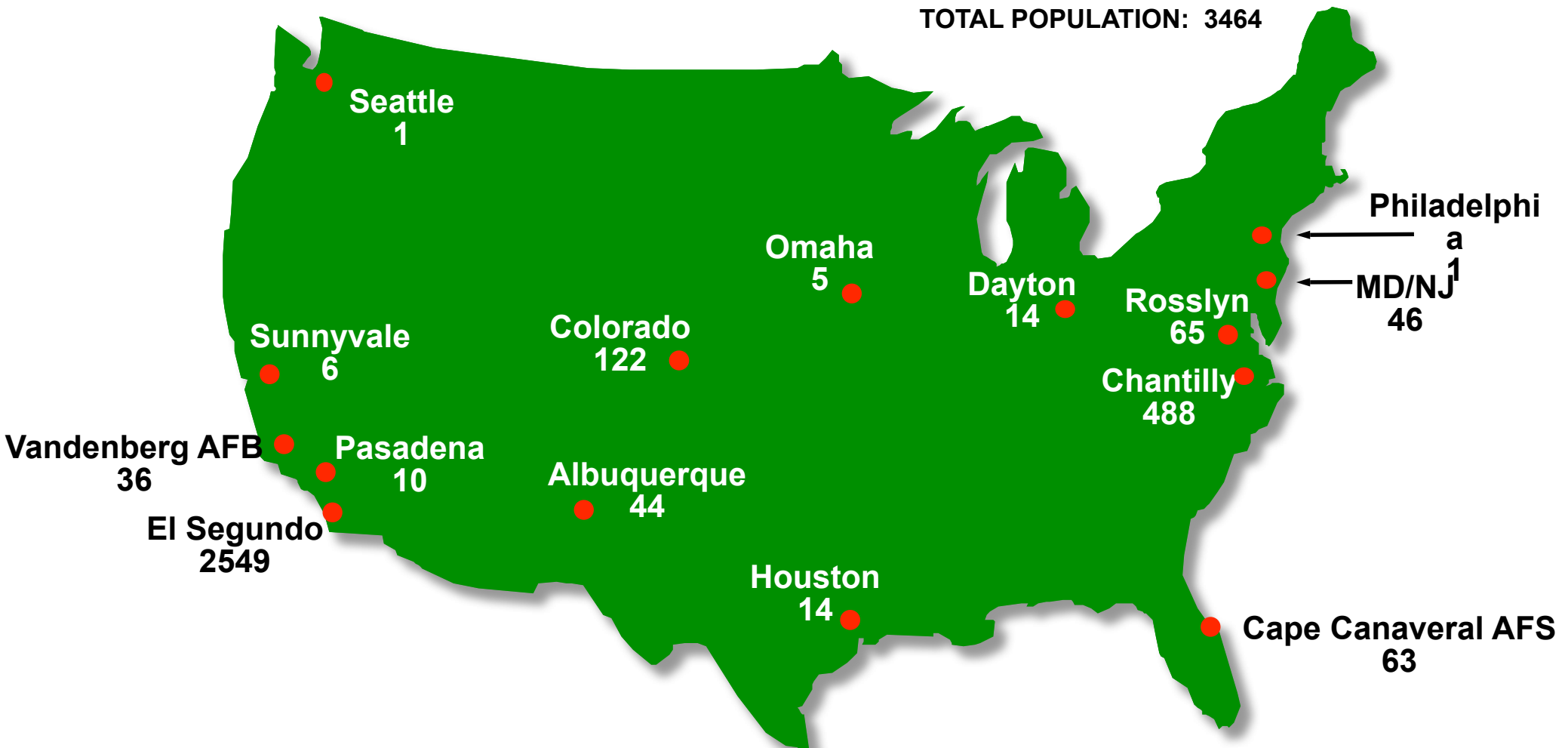
Applies engineering and scientific
expertise to advance the
performance of national-security
space systems

Headquarters in El Segundo, California



The Aerospace Corporation Operating Locations

TOTAL POPULATION: 3464



Number of employees at each location indicated

Evolution of Network Security at Aerospace

- In early years there was no connection to the outside world
- Introduction of the ARPAnet/Internet in the early 80s
 - 1988 Robert Morrison internet worm event
- This caused the establishment of IT security group
 - establishment of egg shell security
 - evolving into security in depth

Protection vs Collaboration

- For 47 years we've never automatically shared data through the firewall
- Collaboration pressures have been building
- Collaboration is sharing among communities
 - data
 - process
 - conversations

Having it Both Ways

- We have been assigned the task of establishing a site that will share with collaborators and only collaborators.
- Sharing should be safe and reliable
- We're looking for a general solution that can be used for multiple projects

Some of the Issues

- What is safe? - all about information assurance. The practice of managing information-related risks
 - Know where it came from
 - Know that it hasn't been tampered with
 - Know that it is well formed
- Reliable means that one can know a transmission happened
 - Point-to-point no discovery necessary
 - Audit trails

The Project

- This project will be restricted to sharing data over TCP/IP
- Develop a protocol that is safe and reliable
- Develop code to test this protocol
- Preferred target language is Java 1.5 or 1.6

A Possible Approach

- Web services
 - defined by the W3C as "a software system designed to support interoperable machine to machine interaction over a network."
- Examples
 - Atom
 - RSS
 - SOAP
 - REST
 - RMI

Coordination

- Telephone conference calls to a 800 or 866 number
- Mailing list for each team
- Some teams in the past have set up web sites