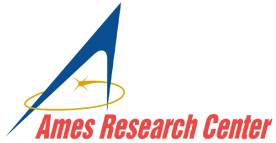


# Facility Management Control System (FMCS)

**FACILITIES MAINTENANCE SERVICES**

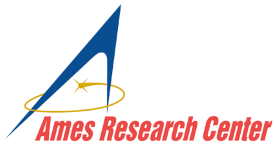
**NASA Ames Research Center  
MOFFETT FIELD, CA 94035-1000**



# INTRODUCTION TO FMCS

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- What is the NASA Ames FMCS
- How is the Ames FMCS used today
- How is monitoring and control achieved
- What is controlled and monitored
- What is next



## WHAT IS THE NASA AMES FMCS

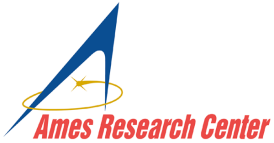
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- A computer-based Building Automation System
- Allows remote monitoring and control of facility conditions
- Monitors critical labs, computer rooms, and building utilities
- Monitors and controls various mechanical and electrical systems
- Alerts maintenance staff when abnormal conditions occur

## HOW IS THE AMES FMCS USED TODAY

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- Monitoring and control 24/7
  - HVAC, Mechanical systems, specific laboratory related systems
- Pre-emptive action to avoid customer trouble calls
- Maintenance tool
- Data collection, trending, and fault diagnosis
- Energy conservation



## HOW IS MONITORING AND CONTROL ACHIEVED

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- One host computer on-site
  - PCs running Windows Server 2003 Rev. 2 operating system
  - Siemens Apogee Insight Building Automation System
- Three (3) consoles used for staff monitoring
- Three (3) operator consoles used by technicians
- Four (4) high speed network communication trunks
- 96 major buildings serviced by the FMCS
  - 118 field panels
  - 4,508 physical I/O points (hardware)
  - 3,626 virtual points (software)
  - Programmed to generate over 2,708 alarms

# WHAT IS CONTROLLED AND MONITORED

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- Air Conditioning Equipment
- Air Handlers
- Boilers
- Chillers
- Control Valves
- Cooling Towers
- Power Meters
- Gas Meters
- Street Lighting
- Generators
- Humidities
- UPS
- Fans
- Pumps
- Sump Levels
- Temperatures
- Environmental Chambers

## WHAT IS NEXT FOR THE FMCS

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- Possible expansion
  - New facilities located on Ames Research Center
  - New facilities located on Moffett Airfield Complex
  - New facilities that are part of the NASA Research Park (NRP)
- Improvements to existing system
  - Remote connections
  - Wireless data communications
  - Speed
  - Upgrades to hardware and software