IED Airport Communication Systems Technology Presentation

IED

Motwane Private, Ltd.

October, 2007

IED Company History

IED Company History

- Founded in 1978
- Innovator in Announcement Systems for **29 years**
- Industry leader in computer-controlled audio systems in transportation industries
- IED provides systems for transit, convention centers, casinos, industrial sites, & arenas.

IED Company History

- IED ACS Systems in busiest airports:
  - top 70/100 in United States (Airports Council International)
  - top 30/40 in the World (Airports Council International)
- Audio + visual display technologies
- IED is ISO 9001:2000 Certified

- **Original Certification April 30, 2002**
- **Re-certification April 15, 2005**

The Certification Body of
TÜV AMERICA INC.
Management Service Division

hereby certifies that

Innovative Electronic Designs, Inc. (IED)
9701 Taylorsville Rd.
Louisville, KY 40299 USA

has implemented a Quality Management System
in accordance with:

ISO 9001:2000

The scope of this Quality Management System includes:

Design And Manufacture of Audio and Visual Distribution Systems for Public Transportation, Stadiums, Arenas, Convention and Meeting Facilities, Industrial, Medical, Educational, and Office Complexes.
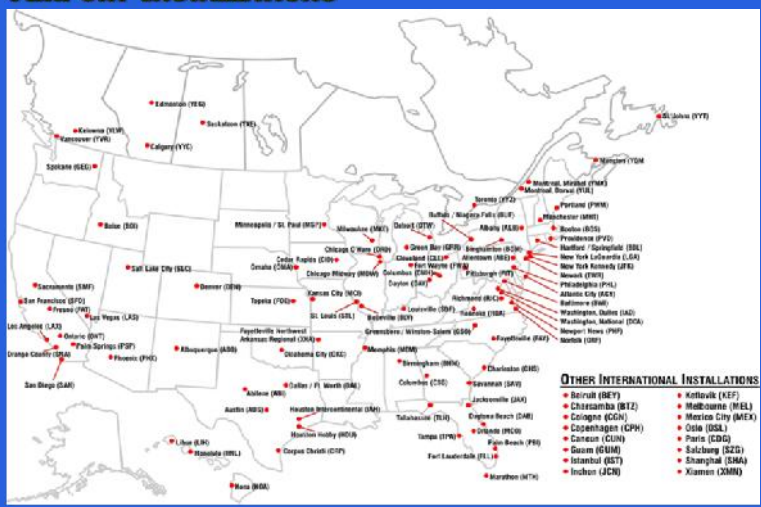
This Certificate is valid until: February 29, 2008

Certificate Registration No: 951 00 1160

**IED Airport
Systems Experience**

Over 200 Airport Public Address Systems worldwide, many with Flight Announcement System and IEDnet integration into FIDS, AIMS, and other flight record databases

- **Largest Airport Market is North America:**

  – **JFK, LAX, Chicago O'Hare, Houston, DFW, NY Laguardia, Minneapolis, San Francisco, Honolulu, and many more.**

- **Top 70/100 in United States (Airports Council International)**

IED Company History

- **European and Asian Airport Projects Include:**

  – **Incheon, Beirut, Brunei, Cologne, Copenhagen, Guam, Frankfurt, Istanbul, Keflavik, Oslo, Paris, Shanghai Honquio, Shanghai Pudong, Tel Aviv, and more.**

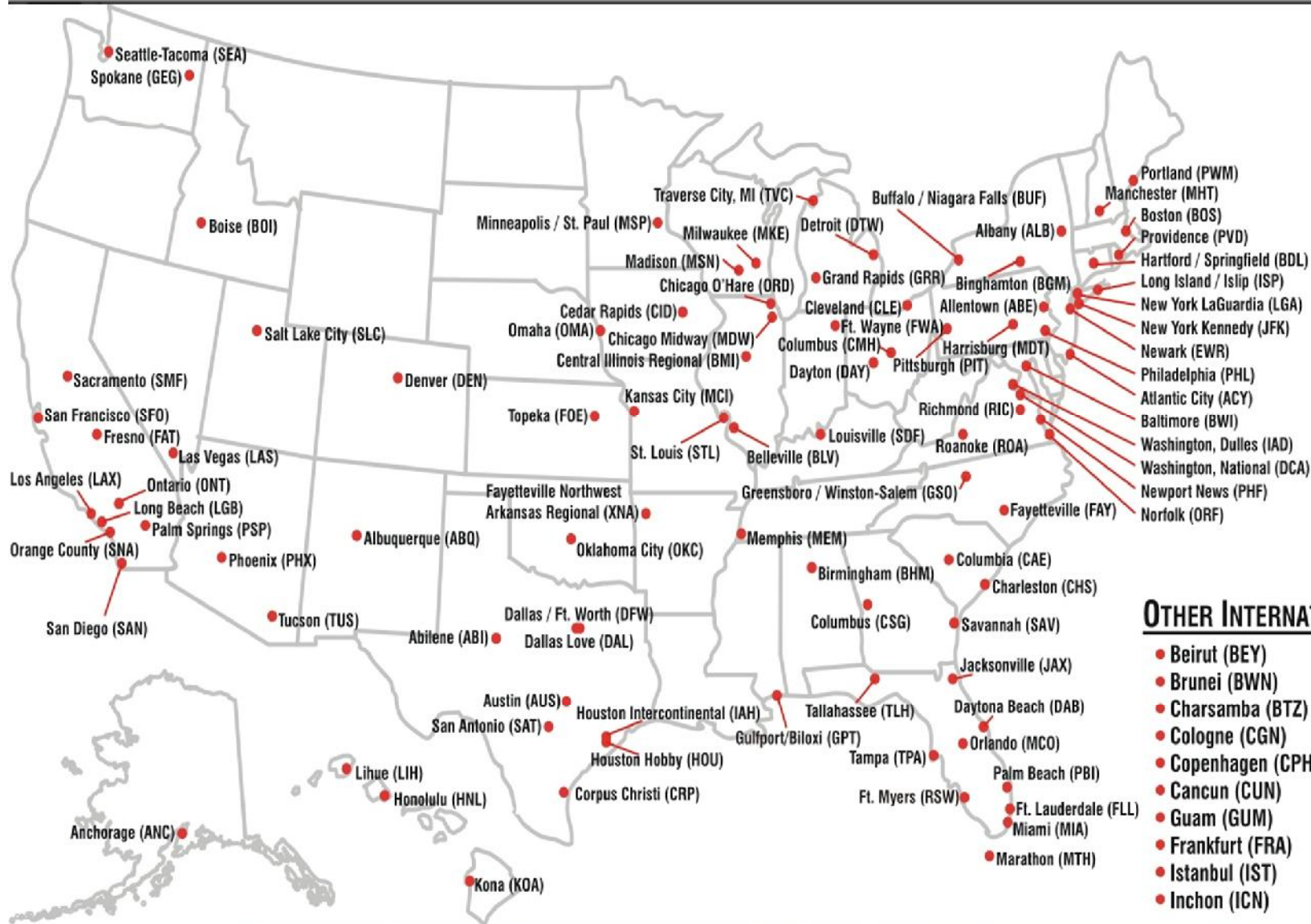- **top 30/40 in the World (ACI)**

IED Company History

- **Recent Airport Installations of New Digital Technology Include:**

  – **Denver, Honolulu, Frankfort T2, Paris CDG, JFK-American Airlines Terminal, Halifax, Louisville, Lexington, and more.**

- **Current Contracts In-house Now:**

  – **Incheon, Shanghai Pudong, Seattle, Los Angeles, Frankfurt Phase 3, Honolulu, Hilo, Cincinnati, and more.**

200 Airport Public Address Systems Worldwide

Seattle-Tacoma (SEA)
Spokane (GEG)
Boise (BOI)
Salt Lake City (SLC)
Sacramento (SMF)
San Francisco (SFO)
Fresno (FAT)
Las Vegas (LAS)
Los Angeles (LAX)
Ontario (ONT)
Long Beach (LGB)
Palm Springs (PSP)
Orange County (SNA)
Phoenix (PHX)
San Diego (SAN)
Tucson (TUS)
Denver (DEN)
Topeka (FOE)
Albuquerque (ABQ)
Abilene (ABI)
Dallas / Ft. Worth (DFW)
Dallas Love (DAL)
Austin (AUS)
San Antonio (SAT)
Houston Intercontinental (IAH)
Houston Hobby (HOU)
Corpus Christi (CRP)
Lihue (LIH)
Honolulu (HNL)
Anchorage (ANC)
Kona (KOA)

Traverse City, MI (TVC)
Minneapolis / St. Paul (MSP)
Milwaukee (MKE)
Madison (MSN)
Chicago O'Hare (ORD)
Cedar Rapids (CID)
Omaha (OMA)
Chicago Midway (MDW)
Central Illinois Regional (BMI)
Kansas City (MCI)
St. Louis (STL)
Belleville (BLV)
Fayetteville Northwest Arkansas Regional (XNA)
Oklahoma City (OKC)
Memphis (MEM)
Birmingham (BHM)
Columbus (CSG)
Tallahassee (TLH)
Gulfport/Biloxi (GPT)
Tampa (TPA)
Ft. Myers (RSW)

Detroit (DTW)
Grand Rapids (GRR)
Cleveland (CLE)
Ft. Wayne (FWA)
Columbus (CMH)
Dayton (DAY)
Binghamton (BGM)
Allentown (ABE)
Harrisburg (MDT)
Pittsburgh (PIT)
Louisville (SDF)
Greensboro / Winston-Salem (GSO)
Richmond (RIC)
Roanoke (ROA)
Fayetteville (FAY)
Columbia (CAE)
Charleston (CHS)
Savannah (SAV)
Jacksonville (JAX)
Daytona Beach (DAB)
Orlando (MCO)
Palm Beach (PBI)
Ft. Lauderdale (FLL)
Miami (MIA)
Marathon (MTH)

Buffalo / Niagara Falls (BUF)
Albany (ALB)

Portland (PWM)
Manchester (MHT)
Boston (BOS)
Providence (PVD)
Hartford / Springfield (BDL)
Long Island / Islip (ISP)
New York LaGuardia (LGA)
New York Kennedy (JFK)
Newark (EWR)
Philadelphia (PHL)
Atlantic City (ACY)
Baltimore (BWI)
Washington, Dulles (IAD)
Washington, National (DCA)
Newport News (PHF)
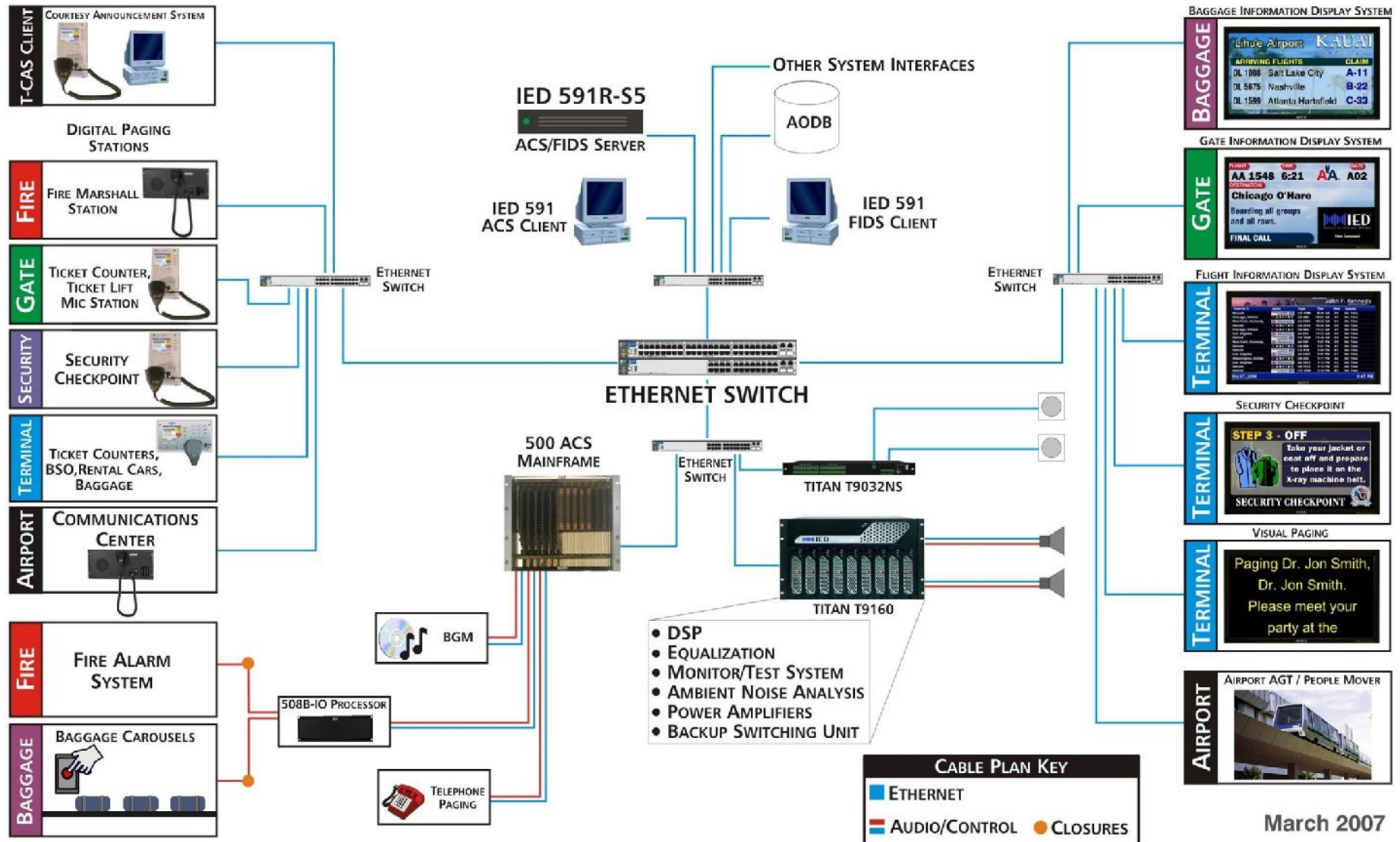Norfolk (ORF)

OTHER INTERNATIONAL INSTALLATIONS

- Beirut (BEY)
- Brunei (BWN)
- Charsamba (BTZ)
- Cologne (CGN)
- Copenhagen (CPH)
- Cancun (CUN)
- Guam (GUM)
- Frankfurt (FRA)
- Istanbul (IST)
- Inchon (ICN)
- Keflavik (KEF)
- Melbourne (MEL)
- Mexico City (MEX)
- Oslo (OSL)
- Paris (CDG)
- Salzburg (SZG)
- Sabiha Gökçen (SAW)
- Shanghai (SHA)
- Tel Aviv (TLV)
- Xiamen (XMN)

The Airport Application
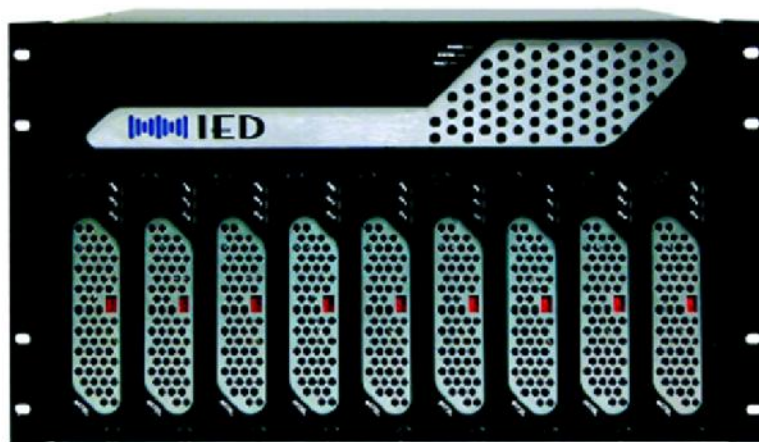
- Requires rugged and reliable hardware

- ## Monitor/Test System

  – Test audio performance of each component as often as ***once per minute***

  – Emergency voice announcement system

  – Example test sequence: Test microphone station audio routed through each point in the system out through the last loudspeaker circuit.

  – ***Email server*** for emailing faults to designated addresses

Titan Series Power Amp Systems

- •T9160 16-Channel DSP Power Amplifier Mainframe
- •T6400 4-Channel Power Amplifier Mainframe

Titan Series Power Amp Cards

T6472 Dual 200W 70V Power Amp Card

T6471 Single 400W 70V Power Amp Card

T6412 Dual 200W 100V Power Amp Card

T6411 Single 400W 100V Power Amp Card

T6482 Dual 200W 8 ohm Power Amp Card

T6481 Single 400W 8 ohm Power Amp Card
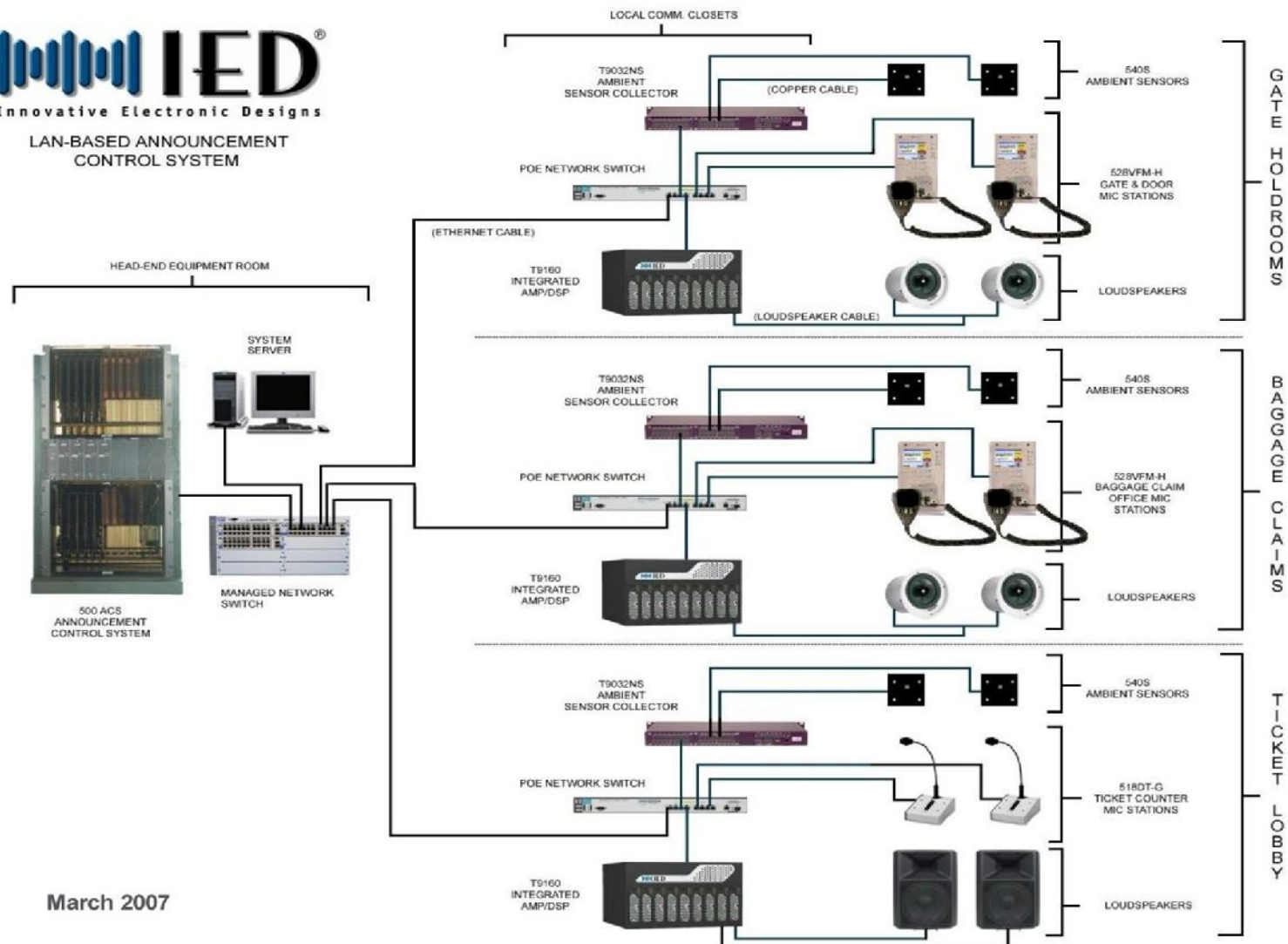
T6002 Dual Channel Line Level Card

Titan Series Collector Units

T9032NS 32-Channel Ambient Noise Sensor Collector

T9032MT 32-Channel Monitor/Test Collector

T9032LVIO 32-Channel I/O Logic/Voltage Interface

T9064LVIO 64-Channel I/O Logic/Voltage Interface

T9016RY 16-Channel Relay Interface

T9032RY 32-Channel Relay Interface

T9040NLR 16-Ch Noise, 16-Ch Logic/Voltage, 8-Ch Relay Interface

T0516BGM 16-Channel Background Music Interface

IED Enterprise

- True Client-Server Architecture
  - SQL Server 2005 Database
  - Modularized into Windows Services
  - Dynamic Link Libraries
  - Browser-based Log and Event Viewer