THE FUTURE OF VOTING in California

The People… The Equipment… The Cost… …The Challenges

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Maintaining Voter Confidence –
& Enhancing the Voting Experience

California Background

- ES&S has 32 County Customers in California
  - 4134 PCOS (OS/OSX, M100)
  - 3381 Accessible Voting Touch Screens (TS/TSX)
  - 2798 Voter Assist Terminals (AutoMARK(i))
  - 19 M650 & Other Central Scan Tabulators

The People

VOTERS

POLL WORKERS

COUNTY ELECTION OFFICIALS

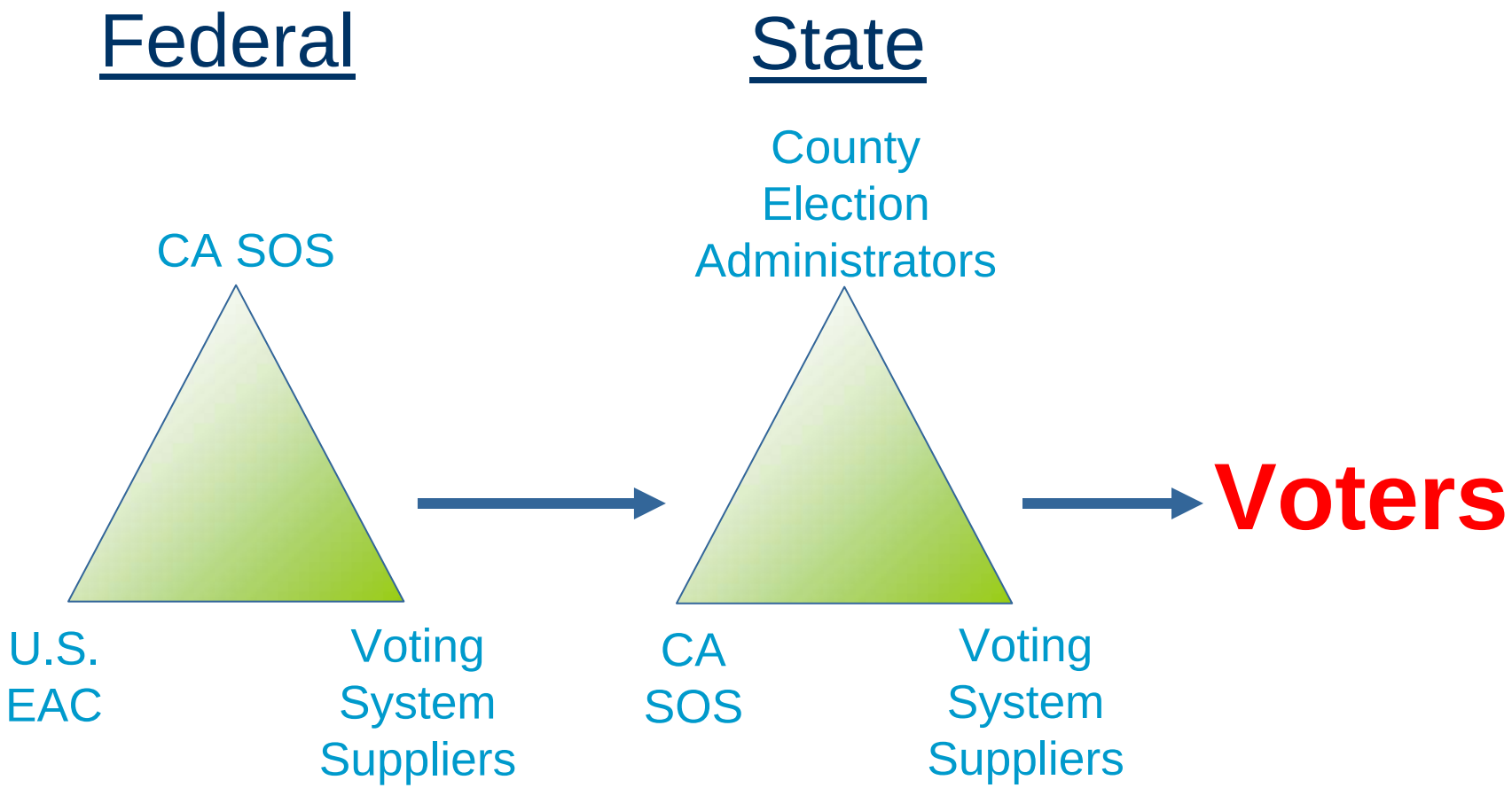
CALIFORNIA SOS

EAC – FEDERAL

VOTING SYSTEM TEST LABS

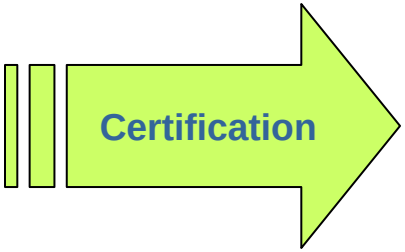
VOTING SYSTEM SUPPLIERS

The People


Federal
State
CA SOS
County Election Administrators
U.S. EAC
Voting System Suppliers
CA SOS
Voting System Suppliers
Voters

The Equipment:
Past, Present & Future

- LEGACY VOTING SYSTEMS- The Past
  - 1990 VVSG
  - 2002 VVSG
  - 2005 VVSG



  - Replacement Units
  - Add-On Units
  - Repair & Maintenance
  - Engineering Change Order (ECO) Parts

- PRESENT:
  - Counties expect to use 4…6…8…10 years?
  - 2002 VVSG – 2005 VVSG – 20?? VVSG

  - Different Levels of Elections
    - County; City; State
  - Election Campaigns
  - Voter Registration

The Equipment: Challenges
The Future of Voting in California

- Funding (Federal; State: County)
- New Federal VVSG
  - Product Development Life Cycle
- Elections:
  - Early Voting: Vote Centers
  - Vote-by-Mail: All Postal Elections & Absentee
  - Accessible Voting
  - FVAP – UOCAVA – MOVE (Internet)
    - e-Ballot / 45 Days - Mail
    - Online Registration
    - Online Tracking
  - Election Day
  - Internet Voting
  - Canvassing: Recounts

The Equipment: Challenges

- More Ways to Vote / More Solutions:
  - Multi-Channel Voting
- Ballots
  - More Races
  - More Candidates
  - More Complex – Instructions - Languages
- Voter I.D.
- Poll Locations
  - Change; Consolidation; Early Voting
- Poll Workers – Technology
  - Goal: To Make Simpler/Easier to Use – Secure • Accurate • Reliable
    - DS200(i)
    - DS850(i)
    - AutoMARK(i)
    - VoteRemote(i)
    - ElectionWare
    - Electronic Poll Books
    - Ballot on Demand
    - Internet

The Equipment: The Future
ES&S Technology

- Digital Scan (Sorting – Adjudication)
- Intelligent Mark Recognition
- TruGrip (Folded Ballot Handling)
- Online Ballot Adjudication
- Auditing & Election Reports
- Accessible

ELECTIONWARE

DS200(i) DS850(i) AutoMARK(i) Electronic PollBook(i) VoteRemote(i)





The Cost Challenge

- Legacy Voting Systems
  - 2002 Voluntary Voting System Standards (VVSG; NASED/FEC)
  - Engineering Change Order (ECO's)
    - Certified Parts Components
    - End of Life
    - RoHs
    - Alternative Manufacturers Parts
    - Inventory
    - Field Maintenance Technician
  - Enhancements
  - Fixes (Hardware / Software)
  - Compatibility

The Cost Challenge

- Future Voting Systems
  - 2005 Voluntary Voting System Guidelines (VVSG; EAC)
  - 20?? Voluntary Voting System Guidelines
  - Backwards System Compatible
  - ECO's (Tracking and Auditing)
  - Federal and State Level Certification

The Cost Challenge

Legacy Systems – Compatible – Future Systems

- 2002 VVSS 2005 VVSG 20?? VVSG

- GUIDANCE • PLANS • BRIDGE
- 6… 10… 12… Years Usage
- Add-On's / Replacements
- New Voting System - RFP

The Cost Challenge

- Parts; Components & Maintenance
  - End of Life
  - Alternative Suppliers for Parts
  - RoHs (Restriction of Hazardous Substance Directive)
  - Technology Advancement (Moore's Law)

- Engineering Change Orders (ECO's)
  - EAC & State Plans (Uniformity)
  - VSTLS (High – Medium – Low) Class Level of ECO
  - Baseline
    - ECO's (Submitted; Approved)
    - Part #'s
    - Units/Models
    - Approval – Uniform Plan
  - Tracking
  - Efficient & Effective (Cost)

The Cost Challenge –

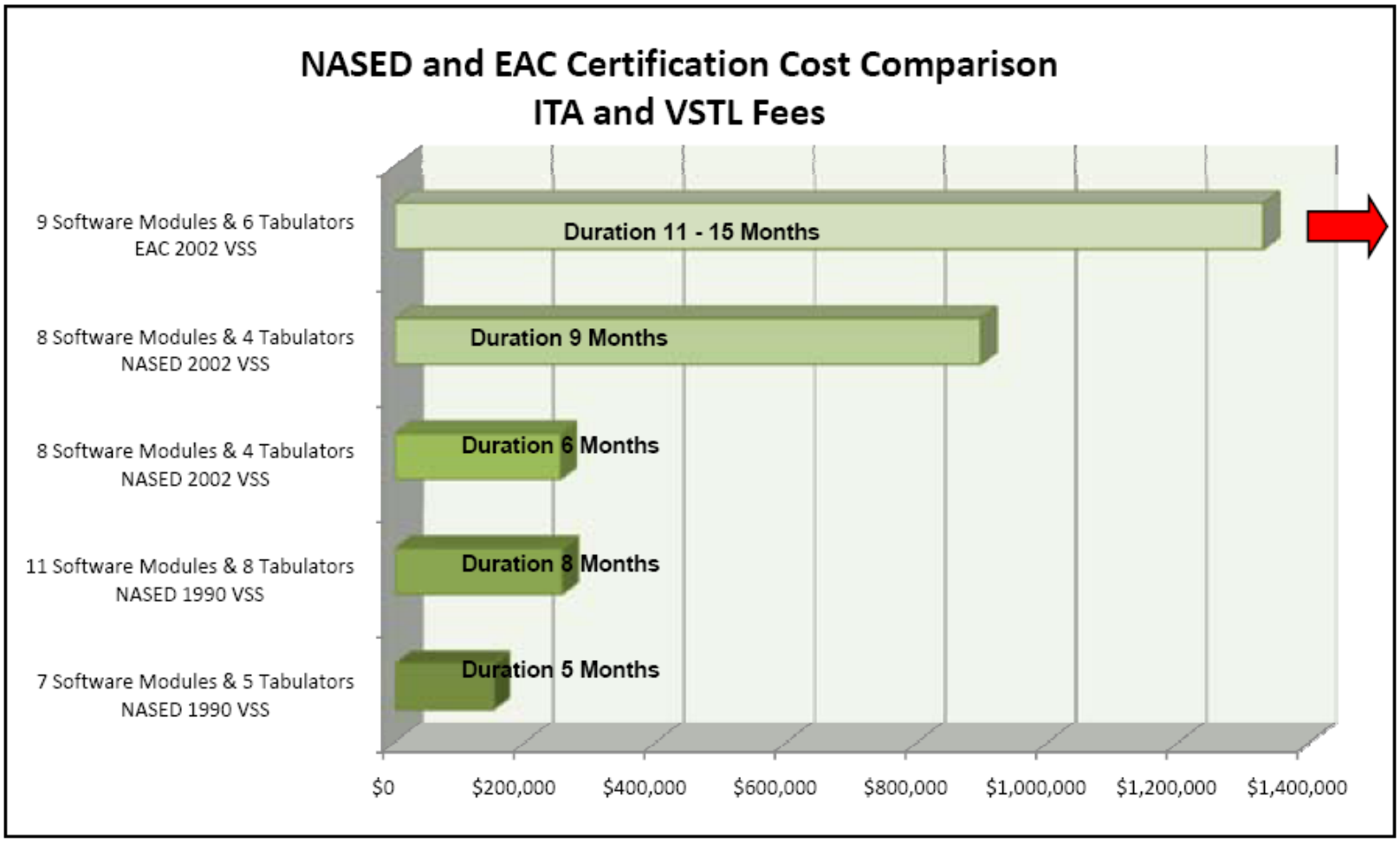
Product Development
Product Life Cycle

- EAC – VVSG Version Timing
- Market Size
  - Pre-HAVA
  - HAVA (2002-2009)
  - Post-HAVA

Funding
$$$$$$

- Customer Needs vs. Like-to-Have
  - Voting Rules
- Product Development (6 - 36 months)
- Federal Certification
  - Time
  - Cost
- State Level Certification
- Install – Training – First Use

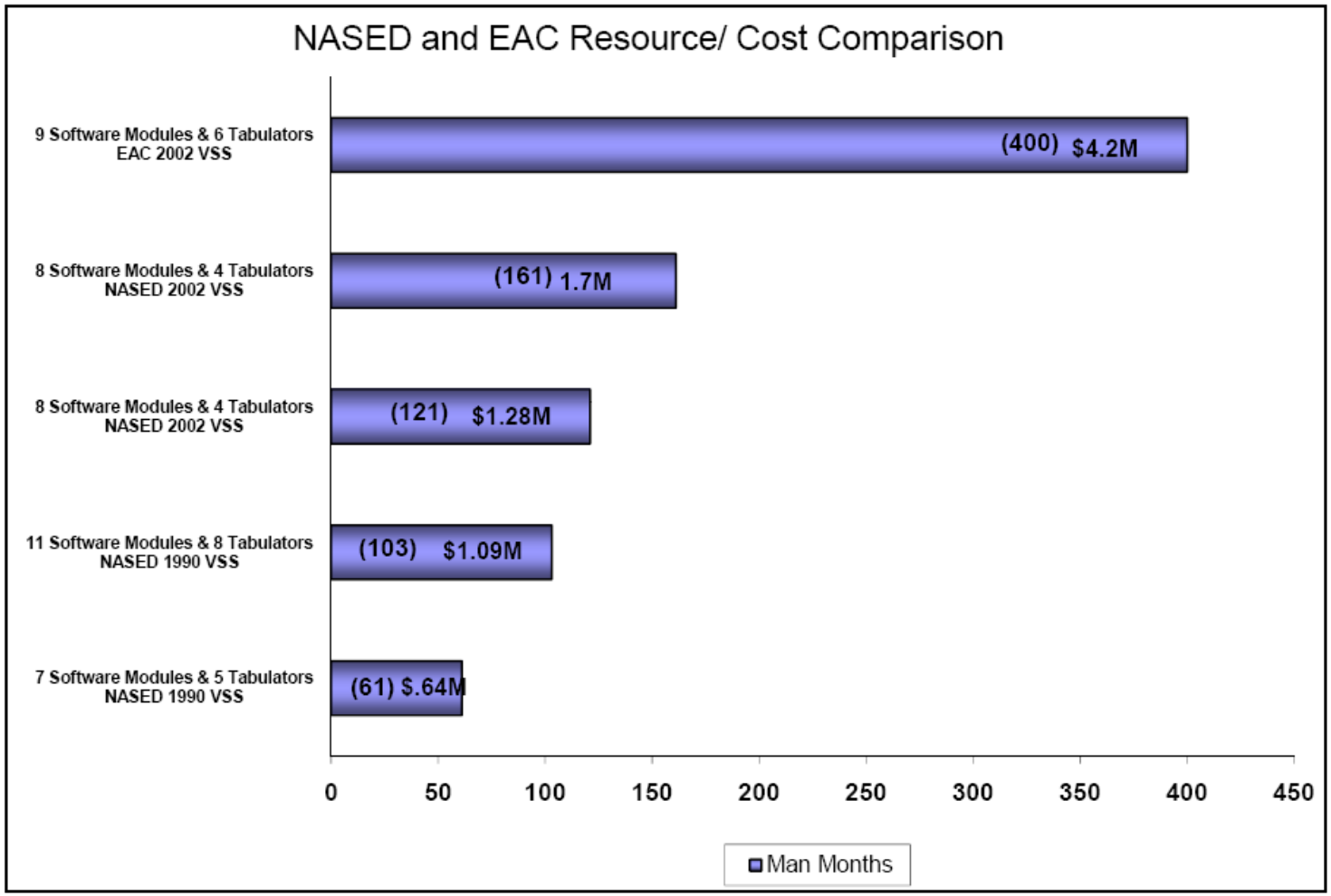
Rising Certification Costs



This figure is a reflection of a current voting system provider's documented costs for system testing as it has evolved over the years from the older NASED/FEC Voting System Certification Process to the new EAC-Administered Process. While each of these processes have their unique nuances, systems submitted for certification to the 2002 Voting System Standards have not experienced a changed in requirements, only in the certifying agency.

Source: ETC Broken Article (2008)

Certification Resource/ Cost Comparison



This figure illustrates the total increase in certification costs from $1.7 million to $4.2 million and the personnel committed to this new certification effort versus previous efforts.

Source: ETC Broken Article (2008)

The Cost Challenge - Future

- Product Lifespan (Useful Life)
  - Certified Repair Parts
- Voting System Maintenance
  - Technology
  - New VVSG Standards
  - P.C. & Electronics Industry (Leading Indicator)
  - End of Life
  - ECO Process
  - Product Improvement

People…

Products…

Procedures…

Lots of Moving Parts

QUESTIONS

???

Closing Remarks

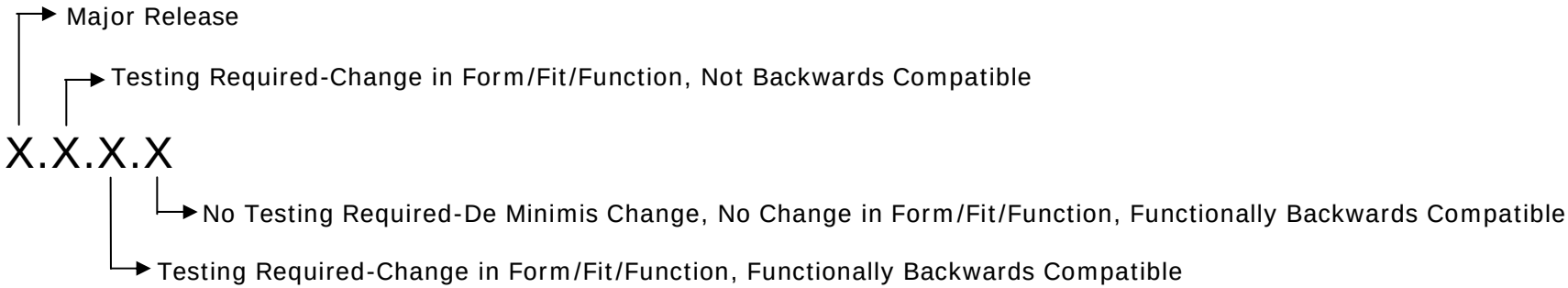
Maintaining voter confidence.

Enhancing the voting experience.

- Customer-focused
- Forward thinking
- Operational Excellence
- Growth Driven

The Cost Challenge – ECO's

- Major Change, Testing Required / Initial Release
- Significant Change, Testing Required
- Deminimis, Not Testing Required



The Cost Challenge

- ECO KEY
  1. Model # Affected
  2. Document # Affected
  3. Revision of the Document Affected
  4. Type of Change
  5. Name of Individual that Requested the Change
  6. Date of the Change Becoming Effective
  7. Description of Change
  8. Reason for the Change
  9. Signatures of Approval
  10. ECO #
  11. Hardware Revision of the Model Affected
  12. Disposition of Existing Stock
  13. Priority for Submittal

The Cost Challenge

- General Condition - When an ECO is Required:
  - Change that affects manufacturing and/or end product and is required to meet requirements (design change)

- PLM (Product Lifecycle Management):
  - A process of documenting & controlling the development of a product from inception to EOL (End Of Life)

ECO Parts


UNITED STATES OF AMERICA
IN GOD WE TRUST
LIBERTY
QUARTER DOLLAR
UNITED STATES OF AMERICA
IN GOD WE TRUST
LIBERTY
QUARTER DOLLAR

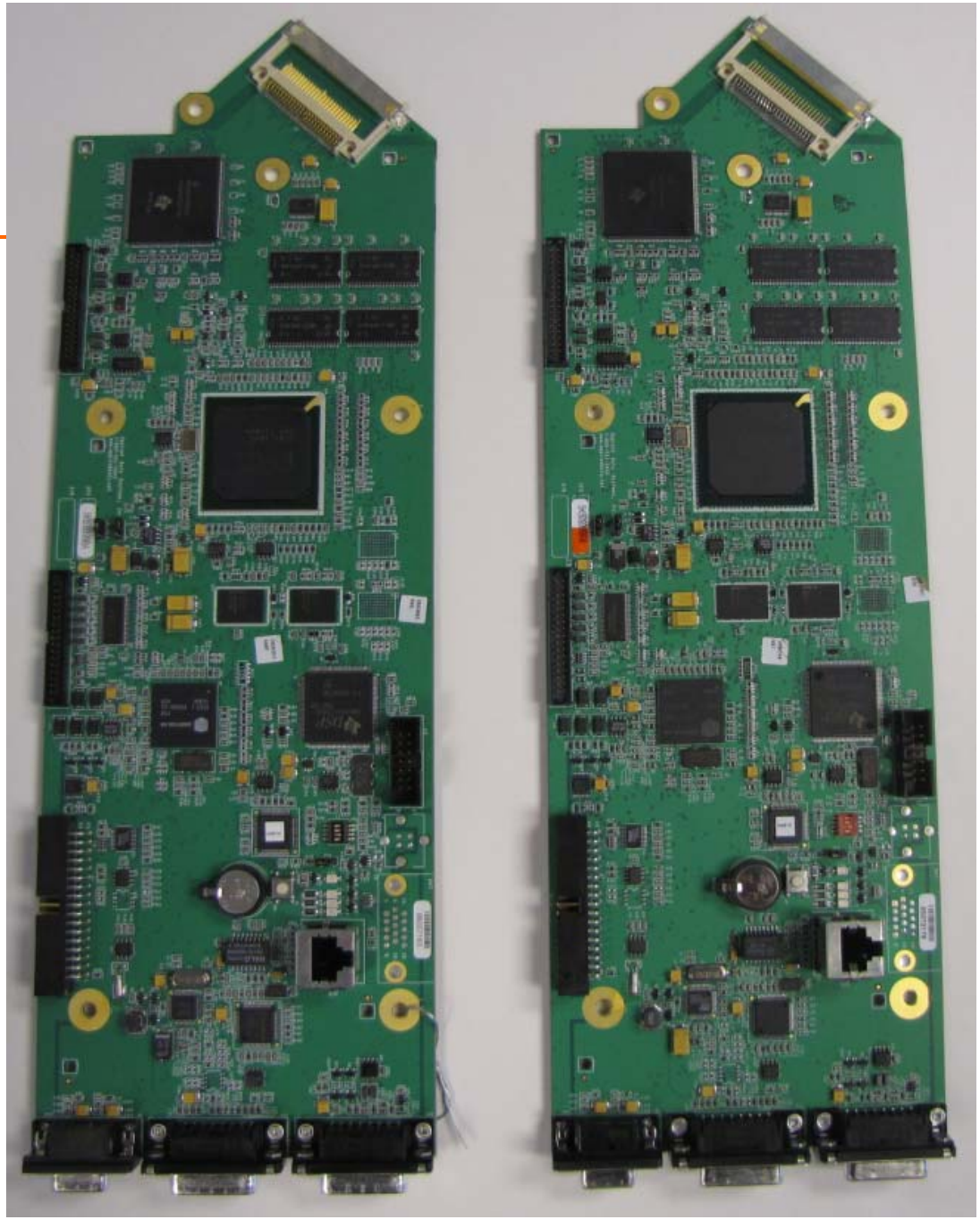
ECO Parts


LOUISIANA
1812
LOUISIANA
PURCHASE
2002
E PLURIBUS UNUM
LOUISIANA
1812
LOUISIANA
PURCHASE
2002
E PLURIBUS UNUM

ECO Parts

ECO Parts

ECO Parts

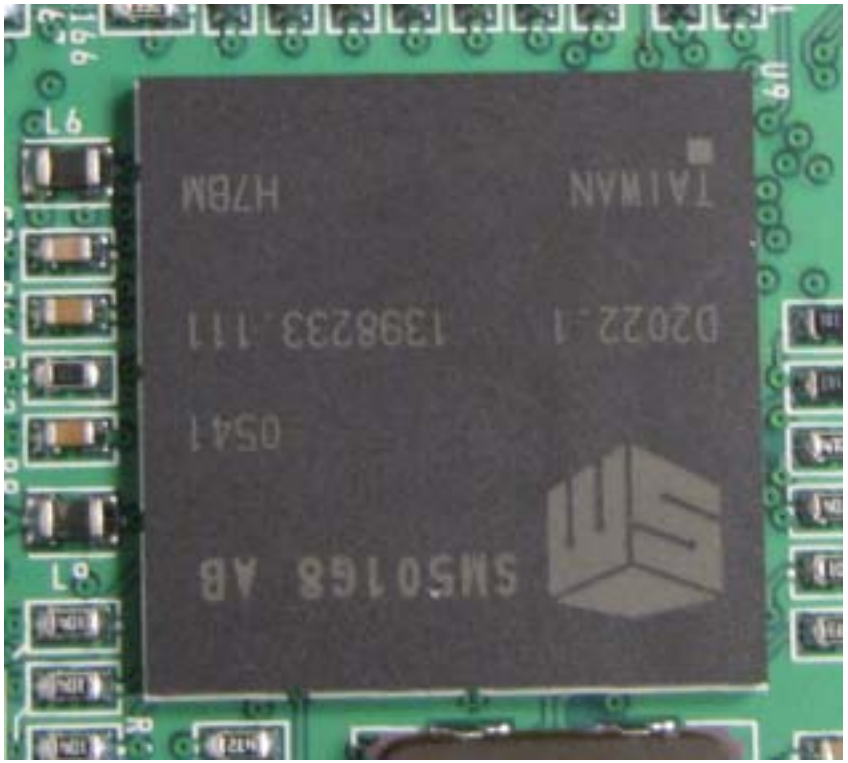


ECO Parts

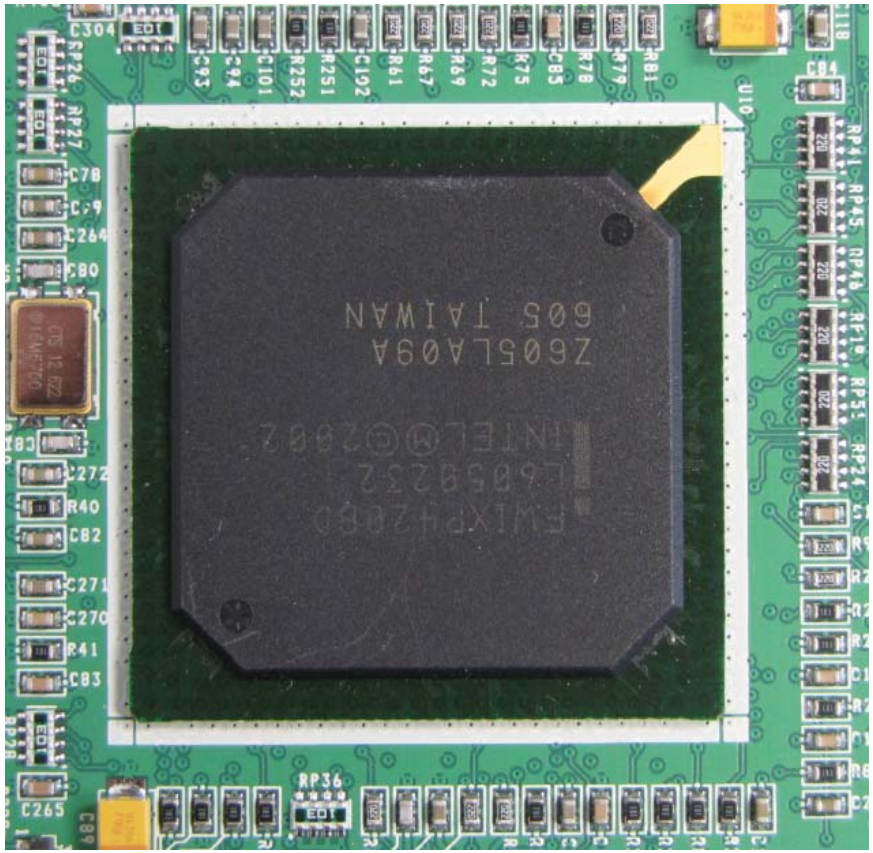

HALO 0747RL
TG110-S050N2
HIPOTTED 3
C145
C147
C149
C150
C155
R147
R144


Pulse
H1183
CHINA Z-6090
C145
C147
C149
C150
C155
R145
R143

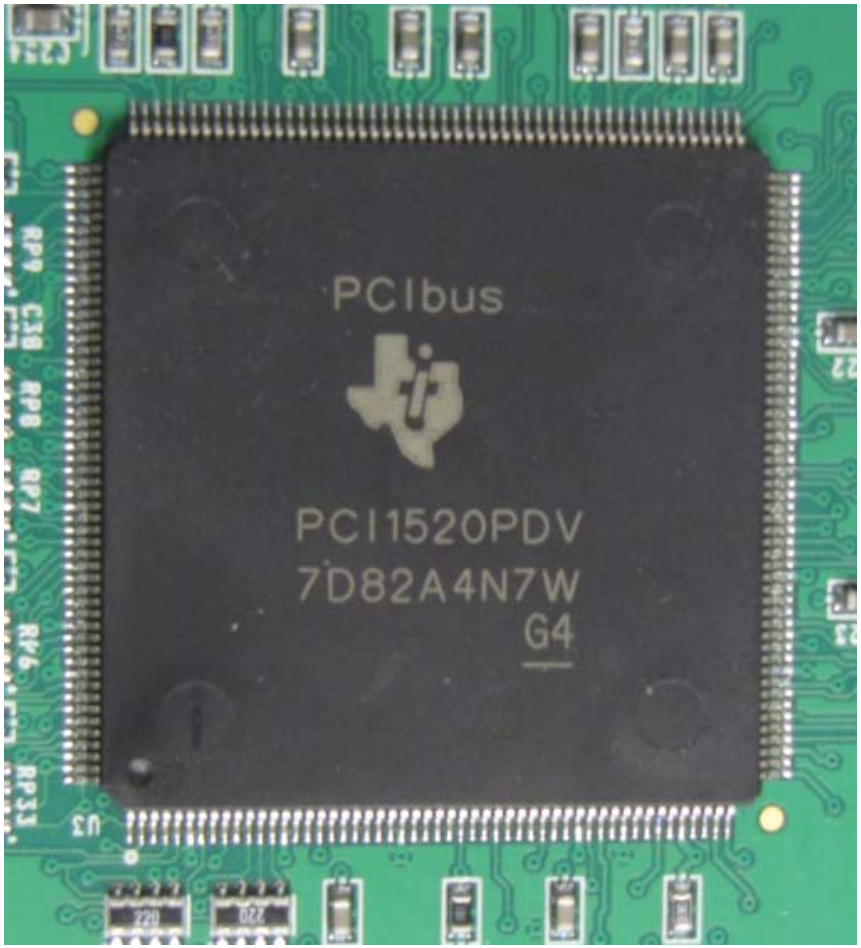
ECO Parts

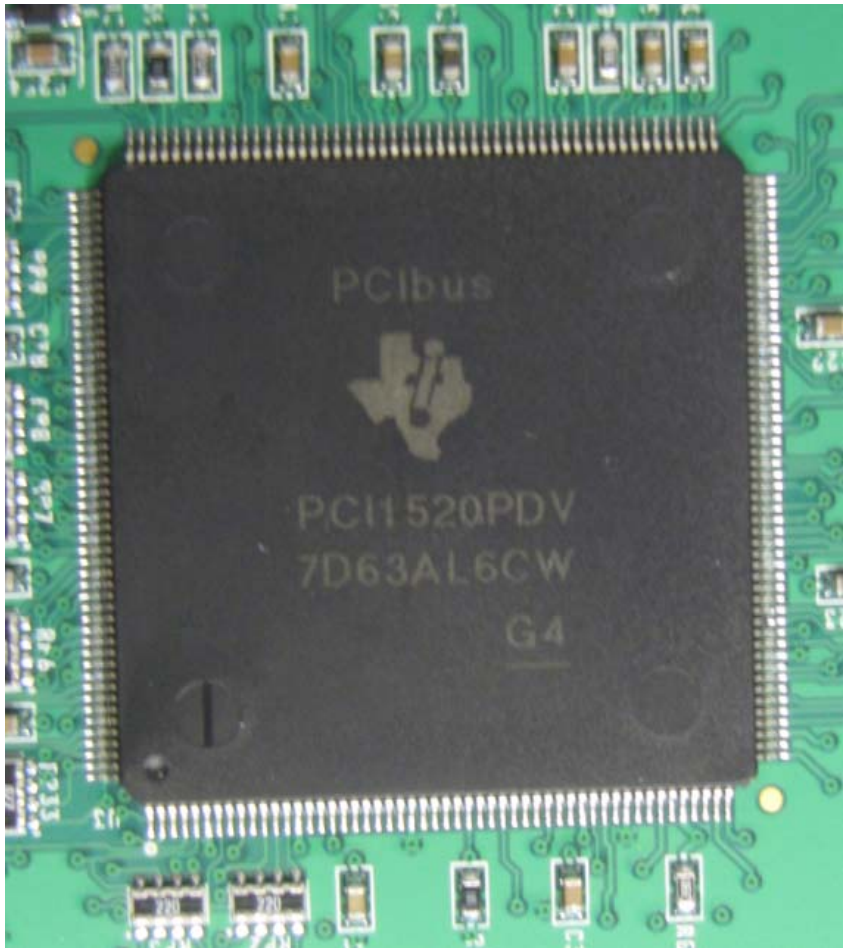


ECO Parts



ECO Parts


PCIbus
PCI1520PDV
7D82A4N7W
G4


PCIbus
PCI1520PDV
7D63AL6CW
G4

The Cost Challenge

ECO Classification & Description:

1. Clerical Change (Documentation/Paper Change) – This is a purely clerical function and can include such items as spelling correction, correcting a manf. Part number that had been entered incorrectly, drawing errors etc. This change does not affect form, fit or function.
2. Alternate Manufacturer (Second Source) – This category exists so that multiple manufacturers and suppliers can be identified for a particular part. The reasons for this change would be to avoid having sole sourced items, eliminate lead time issues between different manufacturers and suppliers and to eliminate sourcing (part availability) problems between manufacturers and suppliers. This change does not affect form, fit or function.
3. EOL Part Replacement or component substitution – A particular manufacturer has chosen to terminate a particular part (end of life, obsolete) so that change is necessary to identify a compatible replacement part. This new part may be supplied by the original manufacturer or it may require sourcing from an entirely new manufacturer. This change may or may not affect form, fit or function.
4. Design in a completely new part or circuit – This change would occur if a design change was necessary that affected form, fit or function of the part being replaced. An example would be if the DS200 was redesigned to utilize a quad core processor as opposed to the current processor in order to gain improved performance. This type of change affects form, fit and/or function.
5. New Model of Parent Item – This change would be if an entirely new generation of an existing product line is designed. An example would be redesigning the DS200 to use a 17” LCD as opposed to the current 12” LCD. An ECO would not be required if a new model number was being introduced.