Services for Electronics Industry

Praveen Gupta
Co-chair – IPC SPC Subcommittee
Master Instructor

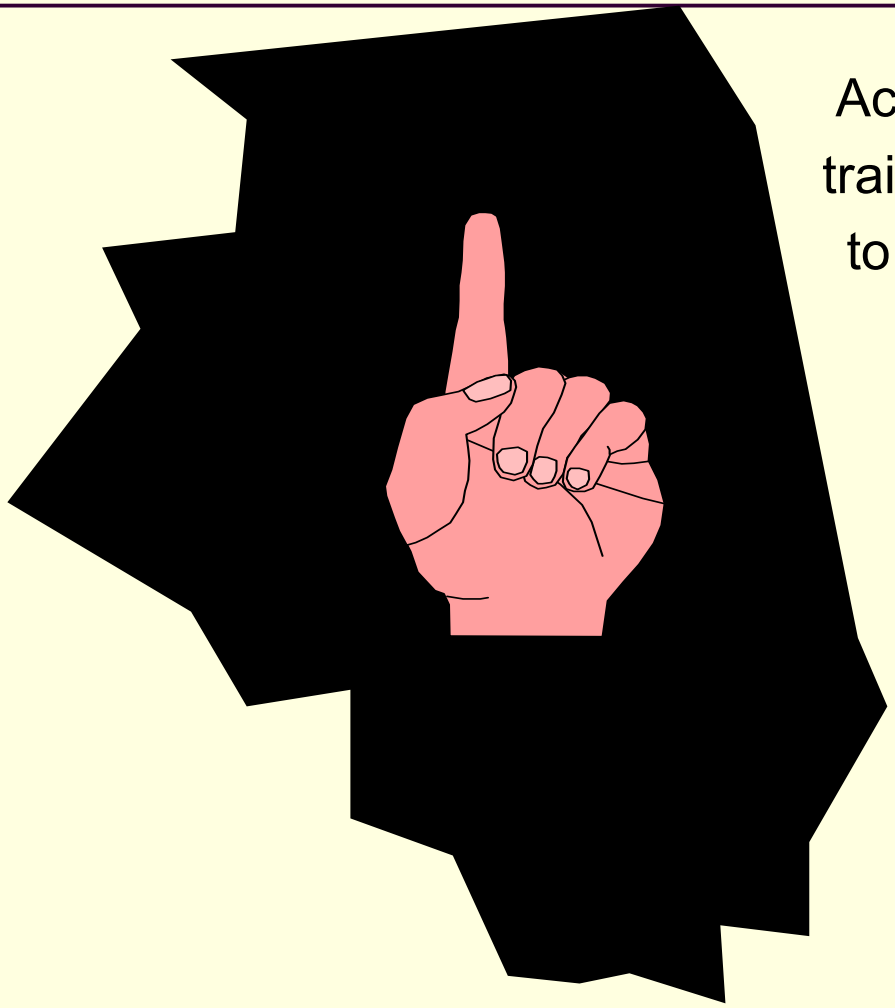
Accelper Consulting
(Visit us at www.accelper.com)

Our Motto

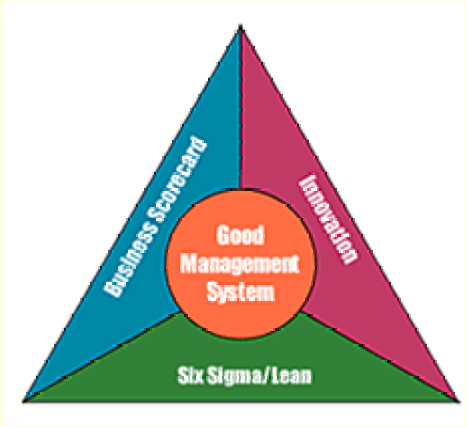
ACHIEVE

SUPERIOR

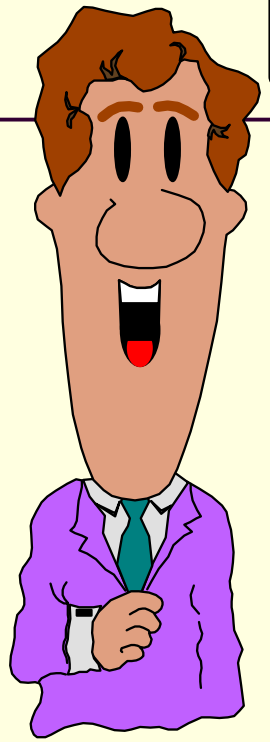
PERFORMANCE



Accelper is the first consulting and training services company in Illinois to implement ISO 9001 compliant management system.



Accelper's 1 - 2 - 3



1. VISION

- *Accelerate Customer's Performance Using Innovative Solutions*

2. BELIEFS

- *Committed to Partnership with Customers*
- *Practice Systematic Implementation*

3. INITIATIVES

- *Provide Best-Value Products and Services*
- *Respond Immediately to Customer's Needs*
- *Earn Customer's Referrals*

Why Customers select Accelper?

- Flexible schedule
- Good prices
- Caring instructors
- Excellent facilities
- Good customer feedback

IPC's CYBER SUMMIT
For the printed circuit board and electronics assembly industries
on-line, real time at the touch of a button

Partial list of Clients

Panasonic USA

MOTOROLA

OMRON
OMRON AUTOMOTIVE ELECTRONICS

SLOAN
Valve Company

DENSPLY

DUREX INDUSTRIES
Electric Heaters & Temperature Sensors

Abbott Laboratories

HEXCEL
The strength within.™

COMDISCO
Delivering the Promise of Technology.

Weber
LABELING & CODING SOLUTIONS

Siemens Building Technologies
Für mehr Produktivität in Gebäuden durch Komfort, Sicherheit und Ökoeffizienz

IPC Certified Training Services

- Accelper is an IPC-Certified center for several training programs
- Accelper offers certification training for operators, inspectors, supervisors and engineers responsible for ensuring the quality of electronics assemblies
- Accelper offers the following certification programs
  - IPC-A-600: Acceptability of Electronics Assemblies
  - IPC-A-610: Acceptability of Printed Wiring Boards
  - IPC-J-STD-001: Soldered Electrical and Electronic Assemblies
  - IPC-7711/22: Rework and Repair

IPC-A-600: Acceptability of PWB's

Overview

- ❑IPC-A-600 Instructor/Inspector training certification program
- ❑Successful candidates will be qualified to instruct for "Worker Proficiency" training

Who should attend?

- ❑All Operators, inspectors, supervisors or engineers responsible for ensuring the quality of PWB's at receiving, in-process or final inspection

Topics

- ❑Printed board product classifications and acceptance criteria.
- ❑Base material surface and subsurface conditions, such as measling/crazing.
- ❑Solder resist coverage over conductors and registration to lands.
- ❑Conductor width and spacing, and annular ring requirements.
- ❑Dielectric material criteria for etchback, voids, and resin recession.
- ❑Plated-through hole requirements for copper plating thickness, voids, nodules and cracks.
- ❑Acceptance criteria for flexible, rigid-flex, and metal core printed boards.
- ❑Skills for teaching the lesson plan effectively.

IPC-A-610: Acceptability of Electronic Assemblies

Overview

- ❑Four-day Class "A" Instructor training program
- ❑Will train, test and certify participants to serve as Class "A" IPC-A-610 series instructors
- ❑Successful participants will receive formal certification as Class "A" Instructors from IPC, and will be qualified to instruct for "Worker Proficiency" training

Who should attend?

- ❑Operators, inspectors, supervisors or engineers responsible for ensuring the quality of Electronic Assemblies at receiving, in-process or final inspection

Topics

- ❑Criteria for acceptable laminate conditions.
- ❑Soldered connection requirements for plated through holes.
- ❑Surface mounting criteria for chip components, leadless and leaded chip carriers.
- ❑Swaged hardware, and heatsink requirements of mechanical assemblies.
- ❑Component mounting criteria for DIPS, socket pins, and card edge connectors.
- ❑Discrete wiring assembly requirements.
- ❑Steps to effectively using the lesson plan and materials, and a review of important instructor skills.

IPC-J-STD-001: Soldered Electrical & Electronic Assemblies

Overview

❑Five-day training program provides hands-on training of electronic manufacturing techniques for consistent quality and performance

Who should attend?

❑Operators, inspectors, supervisors or engineers responsible for ensuring the quality of printed board assemblies

Topics

❑Soldering materials
❑Components
❑Assembly processes
❑Assembly solder process
❑Assembly requirements
❑Coating and encapsulation
❑Rework and repair
❑Product assurance

IPC-7711 & IPC-7721: Rework, Repair and Modification

Overview

❑Provides registered instructors and their companies with a valuable industry-recognized credential

Who should attend?

❑Training, manufacturing and quality assurance supervisors with considerable experience in both teaching and assembly rework procedures

Topics

❑Product classifications, skill levels, tools & materials
❑Surface mount & through hole component removal
❑Land preparation and component installation
❑Primary heating methods: conductive, convective, etc.
❑Handling electronic assemblies
❑Wiring splicing procedures
❑Through hole component removal & installation
❑Chip and MELF rework procedures
❑SOIC/SOT, J-lead and QFP rework

Accelper Instructors

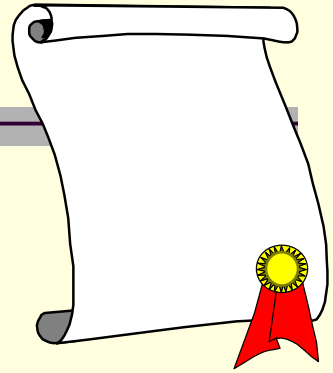
- **Jay Patel, Master Instructor**
- Jay Patel has been actively involved in the Printed Board Manufacturing and Assembly operations for last thirty years. He worked in Process Engineering, Quality and Executive Management areas of the company.
- Jay has worked at W.F. Hall Printing Company, Cunningham Graphics, Galdine Electronics and Circuit Systems prior to joining Quality Technology Company. Currently, he is Master Instructor for IPC Certified training programs for electronics manufacturing industry. He has trained personnel from many personnel, including people from Turkey, Mexico and Brazil.

- **Praveen Gupta, Master Instructor, Co-Chair- SPC Subcommittee**
- Praveen has been involved with electronics industry for last 25 years, working in manufacturing, VLSI, testing, assembly, quality and various operations. While at Motorola, he pioneered implementation of Six Sigma, and improved process yields.
- He is the author of several books on Six Sigma, Innovation, and Business Scorecard.

Customer Feedback - IPC Training

- *"I learned a lot of new solder techniques."*
- *"The instructor was very knowledgeable and able to explain different aspects of the manual that were confusing."*
- *"Instructor is great teacher, enjoyed having him in the class."*
- *"I learned to be able to train people."*
- *"Instructor was a "master" at teaching us the IPC 610 standards."*
- *"This was especially valuable in the lab settings of the course."*
- *"The instructor had a good disciplined layout so the class wasn't boring. He kept it interesting and on an upbeat level."*
- *"The course prepared me for the knowledge needed in my work."*

Awards



- IPC Distinguish Service Award
- 1999 Blue Chip Enterprise Award from US Chamber of Commerce
- ONEAC Quality Improvement Award

Closing

- Thank you for the opportunity to discuss potential partnership opportunity with your company
- We will be glad to serve your employees
- Any questions or comments?
- Next steps?

Celebrating Performance