



# **inEMI**

International Electronics Manufacturing Initiative

## **Framework for Solution Discussions**

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Advancing manufacturing technology

# BGA Availability Solution Discussions

- **Focus on industry segments rather than specific company needs.**
- **What are the alternatives to achieve more secure Sn-Pb BGA availability?**
- **Are there business opportunities created by these alternatives?**
- **What is industry support for alternatives?**

# Proposed Process

- **Review/modify list of ideas that come out of discussions.**
- **Prioritize list based on:**
  - **Which firms will participate**
  - **Risk profile**
  - **ROI**
- **Establish action plan for next steps.**



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## **Discussion Points & Next Steps**

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# Discussion Points – Supply Chain

- Education of the supply base of the high rel. challenges associated with Pb-free conversion (focus on BGA).
- Education of customers of high rel. challenges associated with Pb-free conversion (focus on BGA).
- Is there a business opportunity for doing sub-contract assembly of SnPb BGAs?
- Why not provide BGAs with no ball and tested?
  - Lower reliability risk than re-balling
  - Still requires special handling/routing
- Devices with the most trouble or at risk– high volume consumer parts already converted to Pb-free that are also used for high rel.
- Suppliers publish product families that will EOL Sn-Pb:
  - High rel products have long product life cycle
  - Need at least 3 year visibility of supplier plans
- PCN of Pb-free conversion not captured as EOL of SnPb.
- Influence JEDEC for Pb-free notification (e.g. extend time period).

# Discussion Points – Supply Chain

- Issue a position paper to ensure longevity of leaded BGAs.
- Improve availability of SnPb BGAs through distribution (consolidated demand).
- Aggregate demand for SnPb BGAs (industry buy).
- Survey users to identify the specific issues for SnPb BGA.
- Survey supply base to see what can be supported.
- Establish website that will highlight shortages.
- Do ten year look-out in terms of what SnPb demand will be. May vary by segment:
  - Servers
  - Medical
  - Etc.
- Communicate TAM of SnPb BGAs to supply base.
- Form a sub-committee to focus on Military market for BGAs.
  - Look at composite last time buy for the military.
  - Establish a QPL (qualified parts list) for military segment with commensurate pricing:
    - May be only answer for segments that want to be “SnPb forever”.
    - Would be reversal of COTS strategy.

# Discussion Points – Knowledge Gaps

- **Proliferation of Pb-Free metallurgies is significantly complicating the issue of closing knowledge gaps!**
  - Alloys behave differently
  - Can effect form/fit/function (supplier A part does not behave like supplier B part in mfg. and/or use).
- **Assess our existing projects (across industry) to get an integrated view of high reliability challenges and plans to resolve.**
  - Provide an overview of all the activities related to Pb-free BGA qualification.
  - Do appropriate studies for mixed assemblies.
- **Investigate further the effectiveness of underfill.**
- **Investigate interposer's effectiveness.**

# Next Steps

- **Form a group that will:**
  - Identify what products will be available with SnPb BGAs over time
  - Coordinate among different component suppliers to link up the EOL roadmap
  - Administer user/supplier surveys
  - Write a white paper to communicate issues from a supply and use perspective.
- **Form a second group dealing with DOD that will:**
  - Evaluate re-establishment of QPL for BGAs
  - Consider consolidated buys, etc.
- **Look at business opportunities for sub-contracting and distribution.**
- **Send note to workshop participants to see who wants to sign up for these steps (need both leaders & participants).**



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