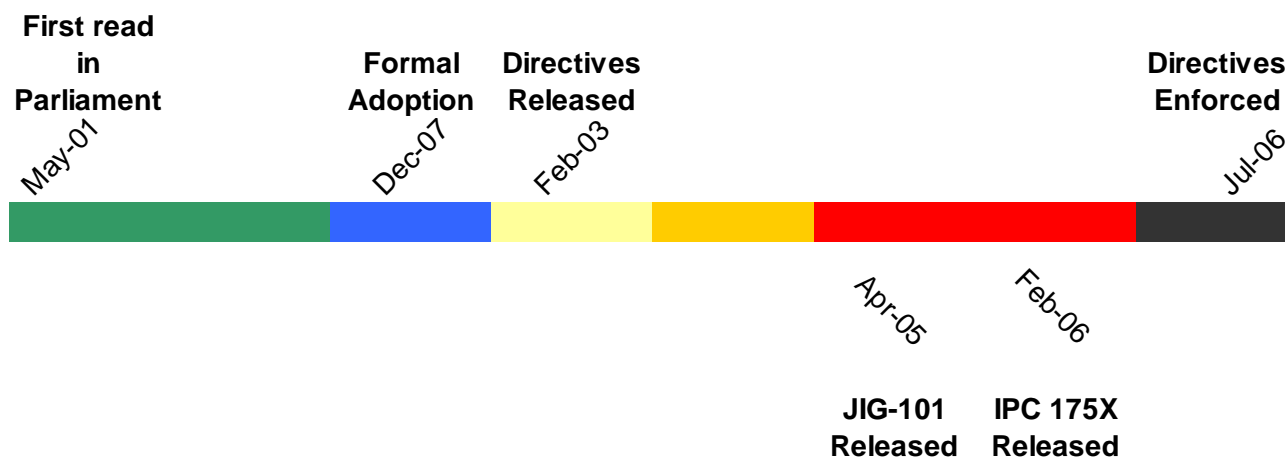# Material Declaration Reporting - Going Proactive

The challenges and benefits of being ahead
of the curve.

Background

- Vitesse is a mid-sized IC manufacturer with both in-house and contracted foundry operations.

- Our assembly operations are contracted out to several common IC assembly vendors.

- Our customer base is comprised of both large through small OEMs and CMs, and we have both direct sales and distributors.

- Because of the need to compress margins, our support services run very lean.

A Rough RoHS Timeline

First read in Parliament
May-01

Formal Adoption
Dec-07

Directives Released
Feb-03

Directives Enforced
Jul-06

Apr-05

Feb-06

JIG-101 Released

IPC 175X Released

*Note - the fact the timeline colors follow the Department of Homeland Security Terror Alert System is purely coincidental

Our Experience as a Mid-Level Supplier

- Customers panicked first
- Suppliers have yet to panic
- Good, reliable information about RoHS application and interpretation was scarce.

Customer Experience

- Started averaging 5 requests per day for Material Declarations and/or C of Cs

- We discovered, for any one part we were receiving, on average, 3 requests per customer (engineer, purchasing, CM, consultant, etc.)

- Requests ranged from one "certificate" to cover all parts, to specific detailed surveys listing all materials contained in the part (100% declaration).

Customers (continued)

- Data requested were not even consistent within the same customer.

- Requests often included other items, such as Montreal Protocol, "5/6 Vs 6/6" declaration, second-level interconnect data, and even proprietary marking requirements.

- Many included "contractual" wording above and beyond simple RoHS status reporting.

Suppliers Experience

- Most suppliers were very, very slow in responding to our requests.

- Slow response added 30 to 90 days to our response time to our customers.

- Some suppliers were (still are) reluctant to supply any certificates or data.

- Some suppliers had confusion over application of exemptions, terms (i.e. homogeneous)

- Input, when supplied, came in many different formats, including JPG.

RoHS Information Experience

- At first, information was scarce
- Information suddenly became abundant, but confusing
- When the root information and sources stabilized, it was too late to react in time for the July 2006 deadline

Our Reaction

- Actions we took internally
- Actions we took with suppliers
- Actions we took with customers
- Actions we took with "others"

Internal Reaction

- Became Educated ASAP
- Focused on building systems, not hiring personnel
- Got our lawyers involved
- Switched response modes

Became Educated

- Actually read the directives
- Attended as many "independent" industry seminars, workshops, forums, etc. and practical.
- Subscribed to newsletters, and professional organization bulletin boards

Built Systems

- Leveraged existing software programs (document control, ERP, CRM, tracking databases)
- Funneled all requests for information through a central customer service e-mail account.
- Looked to ways to limit "human" intervention, even down to how we posted information on our corporate website.

Got Legal On-board

- Got "blanket" approval of one legal statement (ISO 1752 simplified)

- Sought legal department's interpretation of various directives, and compared those with industry opinions.

- Ensured all policy statements were passed through legal before publishing.

Switched to Proactive Response Mode

- Provided suppliers with as much latitude as possible while maintaining a minimum data requirement

- Anticipated customer requests by checking forecasts, EOL lists and qualification schedules.

- Made MCDs available for download from our website for all "registered" users

Working with Suppliers

- Request 100% Material Declarations for all parts.
- Settle for C of C's with JIG A/JIG B material list
- Require data be in "transferable" format (Word, Excel, PDF, etc.)
- "Global" C of C's not accepted
- Suppliers not providing acceptable data sent an IPC 1752 Reply/Request form for completion.
- Those still not providing acceptable data subject to AVL downgrade.

Accommodating Customers

- IPC 1752 Class 4 Distribute forms created for most parts.
- Forms posted on corporate website along with other part collateral (i.e. datasheets)
- Forms for EOL'd parts created upon customer request for data.
- Support customer 1752 Reply/Request forms
- Customer proprietary forms supported on a case-by-case basis.

- Guided customers with "unusual" requests to industry information accessible on the web, items like:
  - "Green" marking/labeling programs Vs "E codes"
  - 6/6 Vs 5/6 certification
  - Current information regarding "due diligence"
  - Application and exemptions under RoHS.
  - Use of J-STD-020.

- CMs pretty much treated as OEMs.
- Discovered early that many requests made by "third-party" data gatherers.
- Many requests for "everything you sell."
- Began requiring a letter from our common customer identifying specific parts and possibly requiring a third-party NDA.
- When independent data gathering for "resale" was confirmed, discontinued communication (form download still allowed)

The Backup

- System in place to ensure due diligence
- Environmental Compliance Reporting System Developed
- Random Material Testing program developed to confirm supplier information
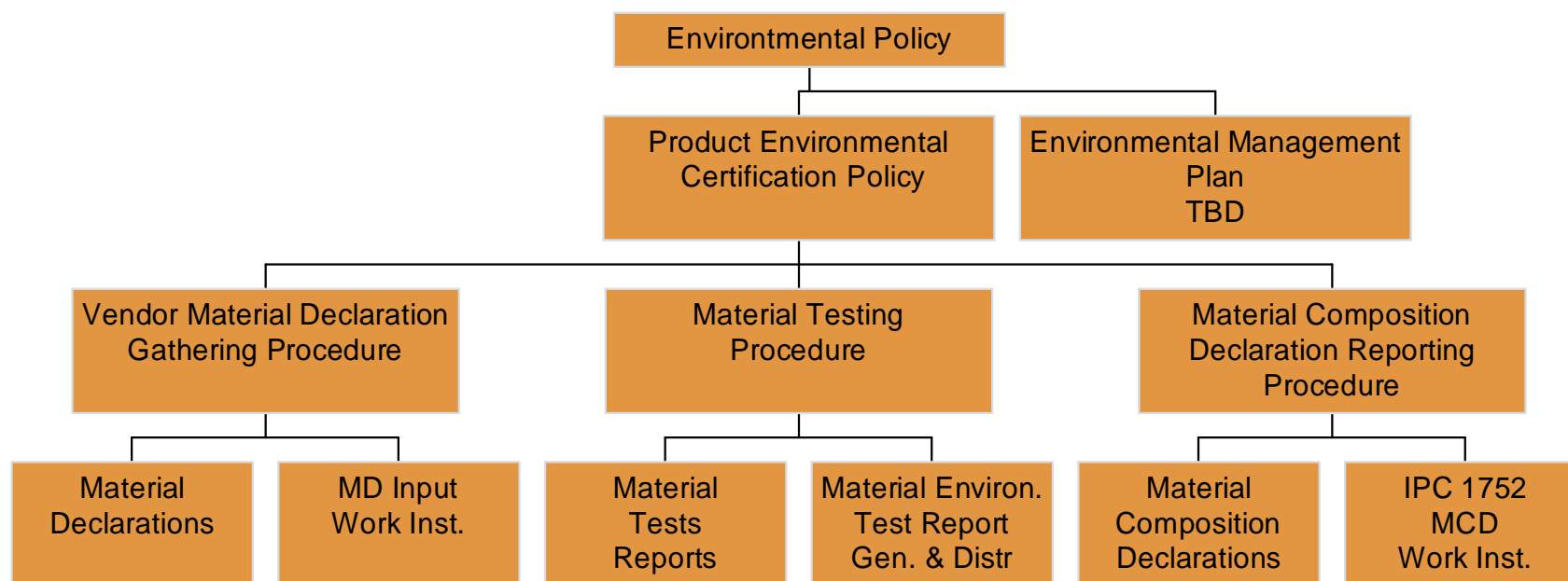
Due Diligence System

- Review and release Supplier MDs, including engineer approval, for qualified and released parts only.

- Supplier MDs and our Distribute forms tracked and managed through ISO 9001 compliant document control system.

- Change management system is now "linked" to MD system. Parts, materials, etc. cannot be changed without a new supplier MD.

- Environmental Compliance Reporting (ECR) System follows a classic ISO documentation structure

- Document histories are automatically tracked via automated document control system.

- Documents are released and available for customer review upon request

ECR System Document Structure

Vitesse Environmental Compliance Documentation

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                    ┌─────────────────────┐
                    │ Environtmental Policy│
                    └─────────────────────┘
                              │
           ┌──────────────────┴──────────────────┐
┌──────────────────────────┐      ┌──────────────────────────┐
│ Product Environmental     │      │ Environmental Management │
│ Certification Policy      │      │ Plan                     │
│                           │      │ TBD                      │
└──────────────────────────┘      └──────────────────────────┘
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Vendor Material Declaration Gathering Procedure	Material Testing Procedure	Material Composition Declaration Reporting Procedure

Material Declarations	MD Input Work Inst.	Material Tests Reports	Material Environ. Test Report Gen. & Distr	Material Composition Declarations	IPC 1752 MCD Work Inst.

Random Material Testing Program

- Percentage of parts scheduled for next quarter are sent to SGS for material testing for the RoHS Six.
- Selection is not totally random and takes into account previous testing, package families, and is weighted towards Pb-free parts.
- Results so far have supported vendor reports.

The Results

- Industry standard MCDs are automatically posted to our website with full confidence.

- Sales team now has a "first stop" to point customers to for RoHS information.

- Website registration allows us to notify when an MCD changes.

- Our vendor ranking has improved at a number of customers.

The Stats

- Posting 1752 forms reduced requests from 5 a day to less than 5 a month.
- We currently have over 400 MCD downloads per month
- Web access to 1752 forms has shortened average turnaround time for RoHS support requests from over 2 months to under 1 week.
- Form availability has reduced requests from data-miners to virtually 0.

The Future

- Committed to keeping current with regulatory and industry developments.
- Continually improve internal systems, i.e., develop a BOM database to automatically populate MCDs.
- Continue to support customers/vendors by providing intelligent guidance based on industry standard data and methods.
- Educate sales/marketing teams so they can provide first-line responses.