ATC18RHA SMPW Commercial Offering

MPW Workshop
ESTEC June 17th, 2004
Summary

- Definitions
- Orders and Invoices
- Cancellation charges
- Die sizes and packages
- NRE prices
- Leadtimes
- Preliminary SMPW run dates
- Conclusion
Definitions (1)

- **“ESA Customers”, “ESA Designs”**
  - ESA will pay for the MPW Foundry NRE directly to Atmel
  - Customer will pay for Atmel NRE

- **“Non ESA Customers”, “non ESA designs”**
  - Customer will pay for both Atmel NRE and MPW Foundry NRE

- **ESA SMPW run**
  - SMPW run which is funded by ESA
  - Open to any European design, ESA or non ESA

- **Atmel SMPW run**
  - SMPW run not funded by ESA
  - Open to any worldwide design
NRE is split in 2 parts

- MPW Foundry NRE
  - silicon costs (data collection, reticules and silicon batch manufacture)

- Atmel NRE
  - remaining ASIC development costs (all Technical Centre, Wafer Probe, Assembly and Test of 5 prototypes)
Orders and Invoices

- **Order for feasibility**
  - 10% of Atmel NRE as in the Preliminary Quotation (*)
  - Invoiced at DSR

- **Atmel NRE Order**
  - 30% - (*) of the Atmel NRE as in the Firm Quotation invoiced at order entry
  - 40% invoiced at Logic Review
  - 20% invoiced at Design Review
  - 10% invoiced at Prototypes delivery

- **MPW Foundry NRE Order**
  - Order placed at the same time as Atmel NRE order for non ESA customers
  - 100% invoiced at LR Closing Date
  - Not refundable
Cancellation charges

- **Standard rules for Atmel NRE**
  - Any already billed NRE items are non refundable
  - The next scheduled payment milestone will be invoiced

- **MPW Foundry NRE is not refundable**
  - If the customer misses the run and wants to embark on the next one, he will have to pay for the MPW Foundry NRE of the next run
  - If the customer stops the design after the LR Closing Date, this amount will not be refunded
  - ESA will penalize ESA customers with 100% of the MPW Foundry NRE in case of withdraw or failure to meet the DR Closing Date after LR Closing Date
Die Sizes and packages

- M1  ATC18RHA95_216  1Mgates  38mm²
- M2  ATC18RHA95_324  2.2Mgates  77mm²
- M3  ATC18RHA95_404  3.5Mgates  114mm²
- M4  ATC18RHA95_504  5.5Mgates  170mm²

- MQFPF - 160, 196, 256, 352 pins
- MCGA - 349, 472, 625 pins
- Refer to preferred package list for package/die combination
• ATMEL NRE costs
  ➢ Are based on the first level and advanced feasibility study results
  ➢ Are design dependent, therefore known to the customer at the preliminary and firm quotations

• MPW Foundry NRE costs
  ➢ For ESA SMPW runs, they are fixed to 937 EUR per mm²
    ▪ ATC18RHA95_216  35.6KEUR
    ▪ ATC18RHA95_324  72.2KEUR
    ▪ ATC18RHA95_404  106.9KEUR
    ▪ ATC18RHA95_504  159.4KEUR
  ➢ For Atmel SMPW runs, they will be higher, yet TBD

• Foundry for Mono project wafer ~ 500KEUR
Leadtimes

- ASIC development cycle time is design dependent, however
  - LR must be held prior to LR Closing Date
  - DR must be held prior to DR Closing Date
  - 4 months between LRCD and DRCD

- Prototypes
  - 16 to 20 weeks from DR Closing Date

- QML-Q
  - 24 weeks from AGR

- QML-V
  - 30 weeks from AGR
### Preliminary SMPW run dates

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<tr>
<th>SMPW run number</th>
<th>ESA or Atmel run</th>
<th>Logic review Closing Date (LRCD)</th>
<th>Design Review Closing Date (DRCD)</th>
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Conclusion

SMPW Weaknesses
- Cycle times
- Fix dates
- Risk of cancellation if not enough candidates
- Confidentiality

SMPW Advantages
- Access to advanced technology at lower price
- Prototyping for R & D without FM
- Commitment to Space requirements (Radiation and High reliability)
- Prototypes and Flight Models delivery