





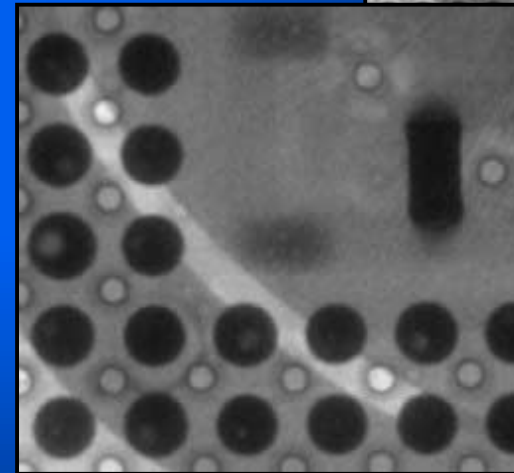
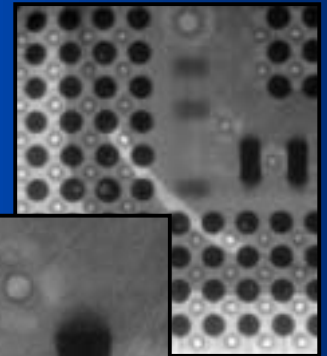
**Reliable EMS company since 1990**

**Screens meeting, 16 June 2005**



# Electro-Hill's history

- **Company established 7th November 1990 by Mrs. Maire Rinne and Mr. Harri Rinne**
- **In 1992 started circuit board manufacturing for Nokia's special systems division**
- **Joint venture As Estron established in Estonia in 1993**
- **Focus on SMD manufacturing capabilities in Lohja facilities in 1994**
- **Electro-Hill Eesti AS established in Estonia in 1996**
- **ISO9002 quality certification for Lohja facilities in 1999**
- **X-ray verification for BGA based boards since 2001**
- **Privately owned,  
Chairman of the Board, Mr. Harri Rinne**



# Production facilities

Facilities

Personnel

Lohja, Finland (HQ)  
1000 m2



30

Rakvere, Estonia  
2500 m2



80



# Basis for know-how

## Quality assurance certifications:

- ISO9002
- AQAP-2120 (Nato quality assurance for production)

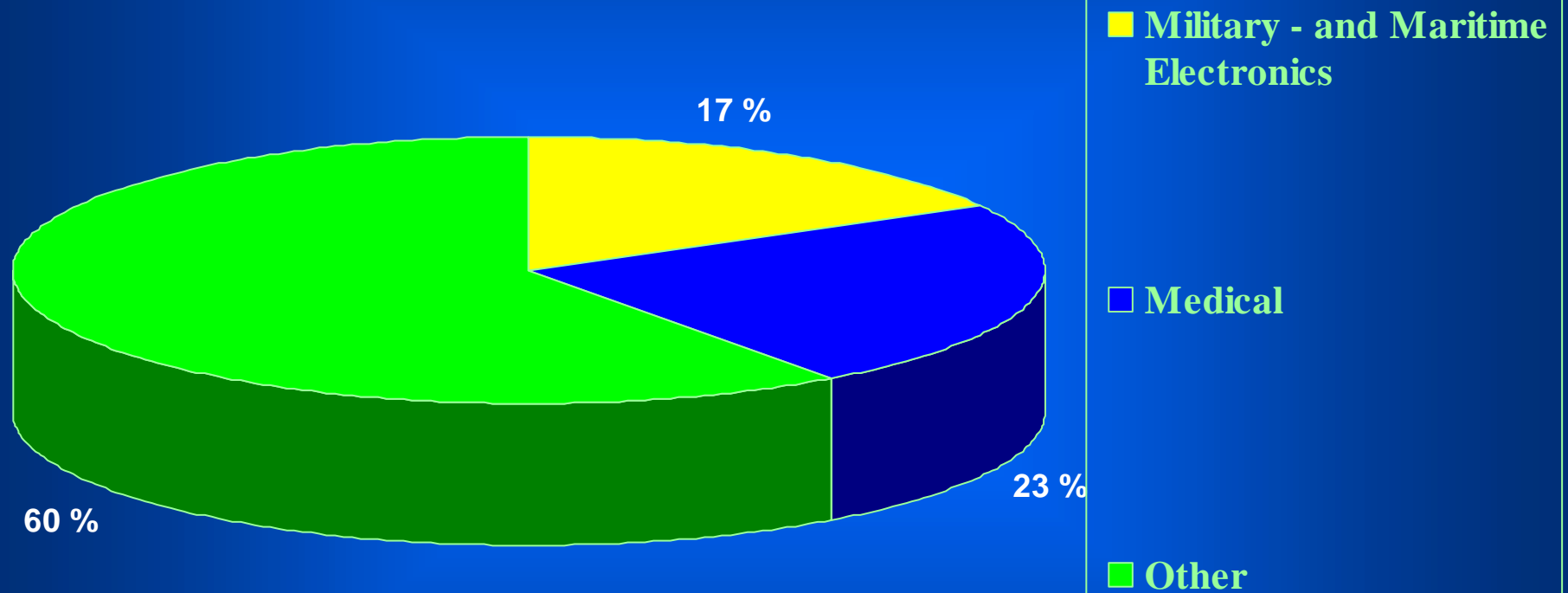


## Focus areas of specialization:

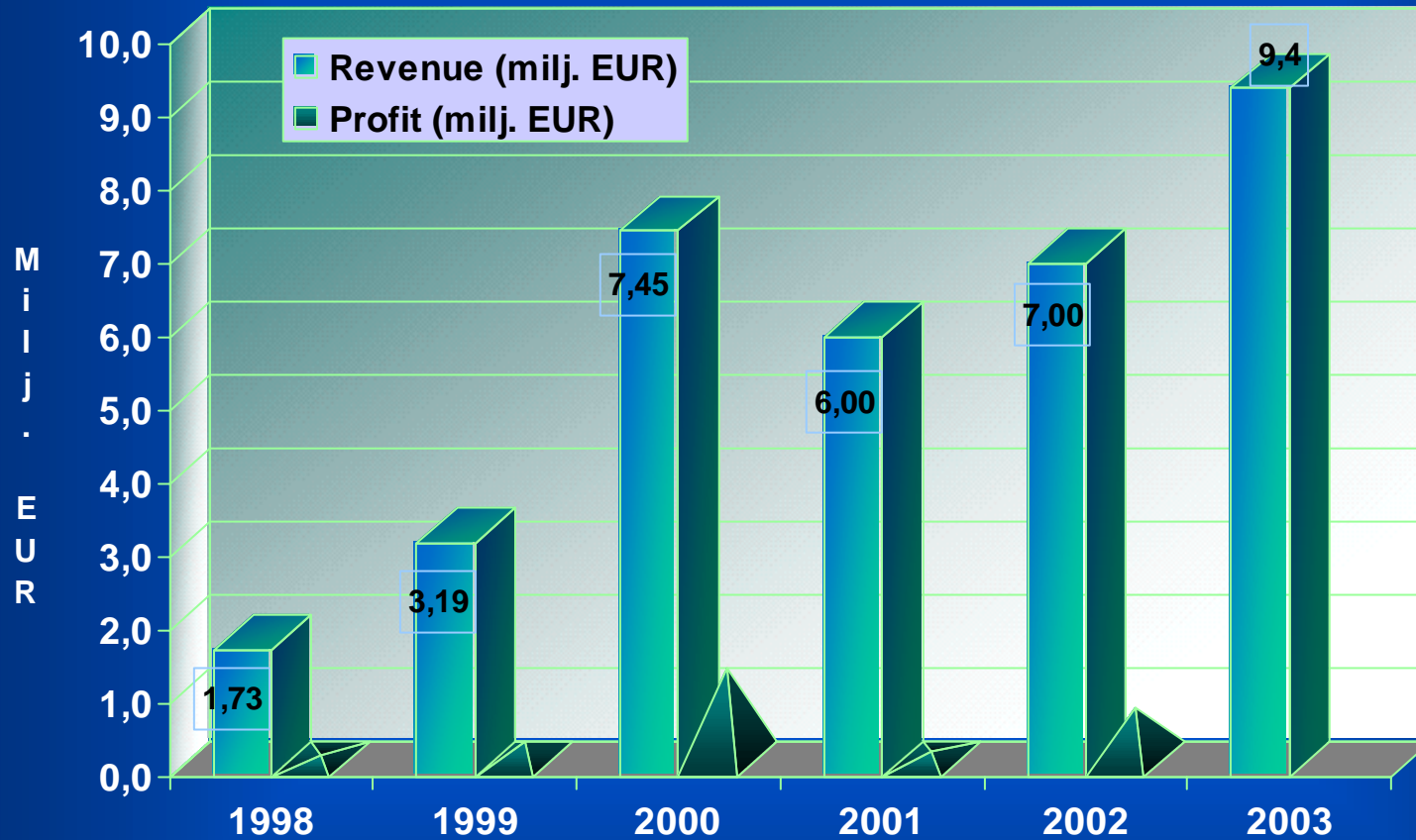
- Military and maritime electronics
- Medical electronics



# Business areas (average)



# Revenues and Profit 1998-2003



# Scope of Core Services

## 1. Design

- manufacture

## 2. Materials procurement

## 3. Assembly

- cables (also RF)
- SMD assembly
- manual assembly
- programming

## 4. Testing

- visual
- functional
- automated
- x-ray

*Full logistics: Packing, shipping, billing*



# Production Machinery

## Placement Machines:

- Mydata MY 9
- Mydata MY 15
- Mydata MY 19 Top Speed Hydra
- Mydata TP 9

## Reflow – furnaces:

- Unitherm Reflow
- Hedin Air Flexiheat
- Finnet
- Conceptric Profile 78

## Test equipment:

- Temp. test chamber LK 600 FINERO
- RTX-2500 X-Ray workstation
- SCHUH VT-8000 optical tester
- SCHUH 960 In-circuit tester

## Soldering Machines:

- ERSA
- Seho
- Kohler
- Kirsten

## Soldering paste printers:

- SMT SL2220
- EKRA MAT-S 40

## Glue dispenser:

- Cam/a lot I414

## Cable strippers:

- Komax
- Carpenter
- Schleuniger



# Reference sectors

1. **Electronics and cables for military testing**
2. **Electronics for industrial sector**
3. **Electronics and cables for medical field**
4. **Electronics and products for harsh environments**



ELECTRO-HILL OY

# Production

## Few issues to be considered

- **SMD**

- One or two side reflow; no big active components on bottom side

- At least 3mm marginal on longer side of the board

- (no components in that area)

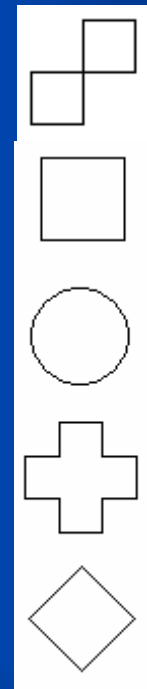
- Paneling (optimal production board / panel size 210\*300mm)

- Try to place components at same direction. (Polarisation)

- Try to generate coordinate file including X-, Y-, rotation and designator values in ASCII format.

- Use reference marks on each corner of the board and panel.

- (diagonal 1-1,5mm) samples =>



# Production issues continued

**To be considered...**

## **Component library**

- Use RoHS compliant components
- Minimize through hole components
- Try to minimize passive component lines on BOM
- Use 0805 or 0603 passive package sizes
- Try to specify at least one substitute for each active component



# Contact persons

## Main contact persons for the SCREENS project:

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