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15360

Upgrading Existing Silicon Foundry Facilities
in the ESOWA Region

by

Stephen L. Gilbert

The Workshop recommends for the consideration of the respective enterprises the upgrading of existing facilities for manufacturing of bipolar devices at Mansour, Iraq, and Sidi Bel Abbas, Algeria, with due attention to increasing their capacity for participating in regional co-operation activities and accepting designs in bipolar technology from several research and development centres in the region. Some considerations in this respect are:

- (1) The technology put in place circa 1979 in Algeria and even earlier in Iraq is no longer current within the broad bipolar technology. While sufficient for the existing production, it does not allow fabrication of more advanced bipolar devices. The manufacturing technology for the existing bipolar technology has improved since the establishment of these facilities. Newer equipment with higher productivity and greater precision, contributing to lower product cost are necessary for more advanced devices and structures.

acquired continually and incorporated within the process flow. Such continuous upgrading of production equipment is necessary to maintain facility viability and should be considered as a normal operational cost at the time of planning of the facility. Currently, such equipments would be better optical aligners, new diffusion furnaces and tubes, more automatic bonders and packaging equipments. One must consider that the useful life of production equipment for microelectronics lies between three and five years only.

2. An industrial development group should be established for reviewing current operations, and trouble shooting, and for proposing new direction and solutions for improvements in operation. Such a group would be multidisciplinary and emulate the considerable successes of the Japanese for a level of increasing productivity as well as economics.

(3) The existing facilities may need to develop greater flexibility in incorporating a more diversified product mix. New designs may be introduced that are compatible with the existing technology and current designs being produced should be enhanced. Some directions could be provided by studying the French experience with bipolar technology utilization by design groups. One should consider the Sidi Bel Abbas facility to accept designs in bipolar technology from several regional research and development centres with the specific intention to verify the design process viability. Such bipolar designs would by their nature be of modest scope and directed at increasing the level of regional cooperation and technological change.