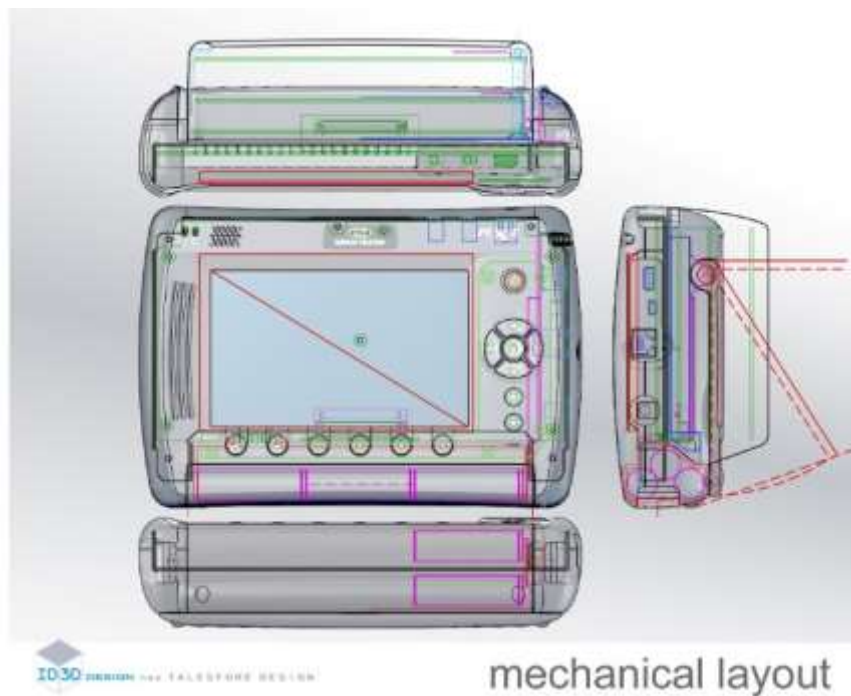
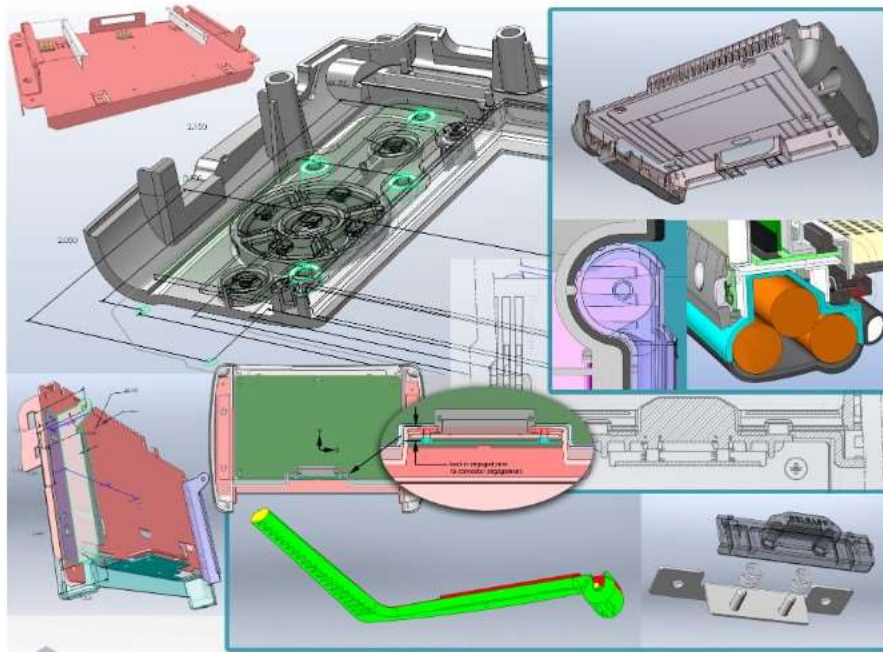




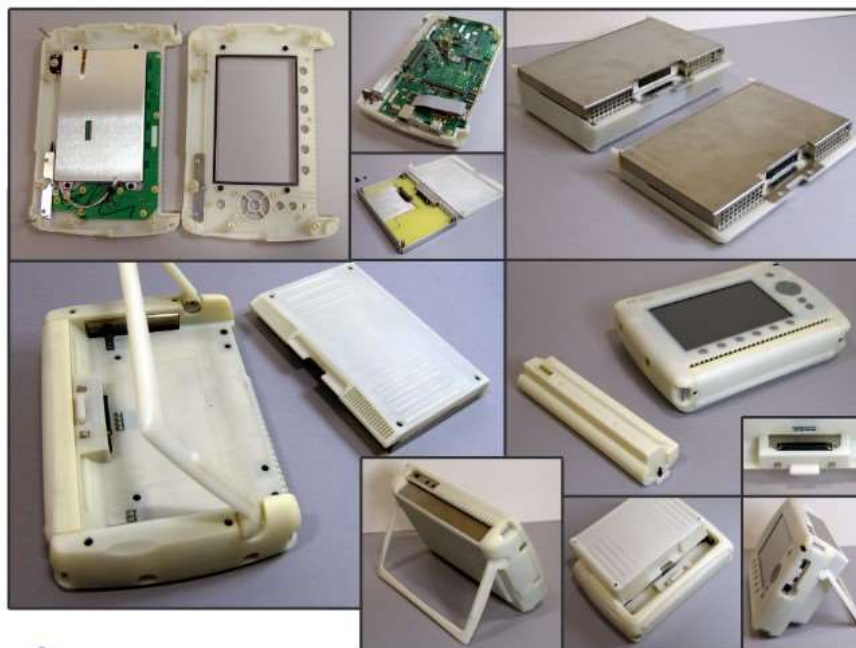
Concept Detail: Once a single direction is established, the concept details are refined in **SolidWorks**. At this point, based on anticipated production volumes, **ID-3D Design** recommends the most cost efficient materials and processes to be used in the manufacturing of this product



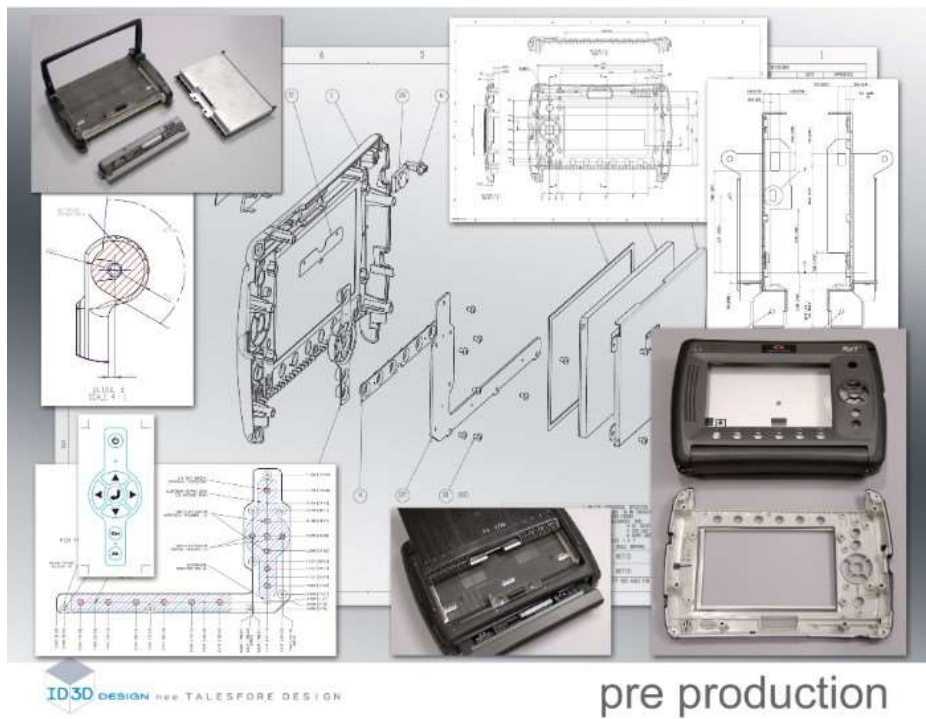
Mechanical Layout: All internal components are configured in a global scale layout where structural and spatial concerns are addressed. Circuit board outlines are generated and interconnection systems are also established here. Traditional 2D projections generated in **AutoCAD** allow all mechanical solutions to be quickly revised, compared and communicated to the client to demonstrate **ID-3D Design's** proposed mechanical packaging philosophy.



Mechanical Detail: Once the Mechanical layout is approved, 3D models of all parts are generated and detailed using Solidworks. Final decisions on materials and processes are established here and the 3D data can be used for various mechanical analysis such as part cost, structural, thermal, and mold flow analysis etc..



Prototyping: The 3D data is used to build 'proof of concept' models to test the fit and function with all internal components. Prototype construction is initiated by the downloading of STL, STP & IGES files to various sub-contractors for the producing of machined plastics and metals parts; rapid SLA based castings; and, sheet metal fabrication. These Prototype models are used in various tests for electrical, structural, RFI and thermal issues validation as well as prove out assembly and human factors issues.



pre production

7

Pre Production: Final detailing and documentation for production tooling is accomplished using **SolidWorks**. Also included are form factor control drawings for circuit board design and master artwork files for screen print graphics and labels using **Adobe Illustrator**. Manufacturing processes include plastic injection molding, metal casting, sheet metal fabrication and die cut films made from standard STP and/or IGES data files generated by **SolidWorks**. First article samples (T-1) are inspected and minor adjustments are made as the tooling is fine tuned for fit and function. These pre-production parts are assembled and evaluated by means of field testing prior to production quantity. All assembly documentation and bill of materials (BOM) are finalized using **SolidWorks**.



production

8

Production: The injection molds are textured and production commences. This completes a successful product's development cycle beginning with Industrial Design Conceptualization /Integration; to Mechanical/Product Design; to Prototype/Testing/Validation; to Pre-Production; to Production; to Assembly; and, finally to Distribution into the worldwide marketplace.