

**Pavement Density Profiling for Segregation Determination** – TransTech Systems' current PQI 301 can manually take density readings transversely across a Hot Mix Asphalt (HMA) mat and determine where there are density differences, a.k.a. segregation. This program would be geared at the innovative use of TransTech's impedance spectroscopy technology in a non-contact method that would utilize a series of sensors along the back of the paver or roller that would be multiplexed with one processor and would allow real-time, in situ mat density profiling on freshly laid mats. This would allow instantaneous rolling pattern adjustments and, used in conjunction with TransTech's temp sensor, would virtually eliminate problems resulting from "tender zone" occurrences. Software could be developed to graphically, or in a 3-dimensional way, allow the operator or researcher to easily and quickly visualize exactly what the density situation is. If done continuously over entire paved sections, a 3-dimensional profile of the entire mat, both longitudinally and transversely, could be accomplished. This technology, when combined with TransTech's innovative and cutting edge multi-physics modeling expertise (for asphalt and soils as well as the compaction process itself) will enable TransTech to solve many of the most urgent problems plaguing the road construction industry today.