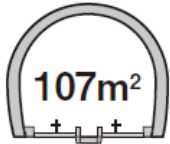
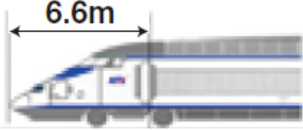
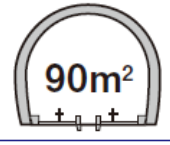



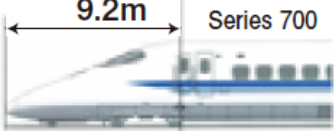
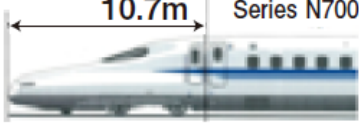


Integration of Core System



Infrastructure components, including civil engineering structures and track, as well as machinery and electrical systems, such as electric power systems, signals and communication equipment, are the elements comprising the tangible aspects of a high-speed rail system that are included in an infrastructure plan. Among these, the “core” components, or those that should be completely integrated into the system, are the integration between rolling stock and civil engineering structures (tunnels, bridges and viaduct) and the track (including turnouts) as well as the integration between rolling stock and signals.

In accordance with the principle of crash avoidance which consists of a dedicated high-speed railway and ATC system, the weight of rolling stock may be reduced. Lightening the rolling stock axle load reduces the strength required of bridges and elevated track. High performance acceleration and deceleration as well as airtightness make it possible to select tunnels having a smaller cross-section and small turnouts and thereby alleviate engineering work related to civil engineering structures and track.

	Tunnel Cross-Section	Rolling Stock Nose	Maximum Speed
Korea KTX	 107m ²	 6.6m	300km/h
Taiwan THSR	 90m ²	 8.0m 700T	300km/h
Japan Shinkansen	 64m ²	 4.4m Series 0	220km/h
		 9.2m Series 700	285km/h
		 10.7m Series N700	300km/h

If performance of the rolling stock passing over a dedicated high-speed railway is the same, then signal equipment on the tracks may be simplified. If the route along which they rolling stock passes is the same, then the signal data inside the rolling stock may also be simplified because it is sufficient to load rolling stock only with onboard signal data corresponding to the signal equipment along the track.