



Photo: Messe Berlin

Hamburger Hochbahn exhibited the first pre-production **DT5** EMU, developed by Alstom and Bombardier working in consortium (see TU 2/10, pp. 32 - 33). It is scheduled to start test runs on the network in March 2011, and will enter test commercial service in late summer that year. By the end of 2015 all the DT5 EMUs in service will have been replaced by the 68 DT5s, which are being built under a 240 million EUR contract. The left-hand photo shows the least-visited part of the Berlin Messe - the access branch to the fan of sidings, with the DT5 being shunted up the steep ramp from the

cut-and-cover tunnel to ground level on 18 September 2010.

Unlike earlier Hamburger Hochbahn trains, the three-car DT5s are articulated. The end cars have one bogie each, under their outer ends, and at their inner ends they rest on arms or projections of the underframes of the centre ones, which have two bogies - see the accompanying detail photo on the right above, in which the centre car (with bogie) and the supported inner end of an end car are visible. The bodysells are made of stainless steel - there is thus no need for primer, anti-corrosion treatment or paint, and the



weight of each car is thus reduced by 600 kg. The front modules (see photo on the right) are produced by KWM Weisshaar of Mosbach, Germany.

The traction motors and power electronics systems are water cooled, which not only results in quieter operation but also enables waste heat to be used for carriage heating purposes in winter. Further testing and commissioning at Bombardier's Hennigsdorf works is to take place, together with a visit to the RTA Rail Tec Arsenal climatic tunnel in Wien, before the train is moved to Hamburg.



One of the several new exhibits by the Hübner Group was the **FX 1000** tram articulation system. In the past, given the great diversity of urban public transport vehicle types, individual articulation systems had to be designed or adapted to suit each new model that appeared - a laborious method which required constant changing of the parameters of the components required. The new articulation system divorces the articulation unit from the vehicle adapter, and results in greater flexibility,



Photo: Mike Bent



since only the adapter components have to be tailored to the requirements of the vehicle manufacturer. The production technology of the modules is simplified and the universal articulation unit can be produced in greater quantities. The new, more compact articulation construction also weighs significantly less, while having a considerably higher loading capacity with a generous compressive force (as far as trams are concerned) of up to 1,000 kN.



Photo: Trapeze

Trapeze presented the company's „Thinking in 360 Degrees“ methodology for bus and rail transport system planning, automated vehicle location and control, vehicle equipment, and passenger information. Among the company's exhibits were the latest displays for on-board dynamic passenger information using single and dual screens. One of the special highlights was the new **Web Display Feed (WDF)** solution, which combines dynamic passenger information with topics from the Internet, for use at stations and stops. This offers passengers comprehensive timetable and departure information, and also enables control centres to vary this with interesting information from the Internet or, for example, street maps of the areas immediately surrounding bus and tram stops and railway stations.

Photo: Tomáš Kuchta



ABB Sécheron of Meyrin, Switzerland, one of the branches of ABB, unveiled a new, low-maintenance high-speed DC circuit breaker for metro trains, trams and trolleybuses. Two types are produced, both for 30 kA-rated short-circuit making and breaking capacity, namely the **DCTrac 915** for 900 V and 1,500 A, and the **DCTrac 1815** for 1,800 V and 1,500 A. Thanks to its compact design, this circuit-breaker model needs only half as much space as, and is around a third lighter than comparable products. In addition, it manages without any need for heavy metal cadmium and thus fulfils the EU RoHS directive concerning the use of hazardous substances in electrical and electronic equipment. Even under the most severe climatic conditions (-40 to +70 °C), its extremely robust design permits at least 200,000 operations without any servicing being required. Batch production is scheduled to start in 2011.

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Photos, unless otherwise cited, by Bohuslav Kotál