



## Orastie Viaduct

The SSF – Rapid solution, patented VTR<sup>®</sup>, was adopted for the motorway viaduct located on the Orastie - Sibiu Motorway section at km 1+240 which crosses over in obliquity (approximately 33°) the Pan-European double railway corridor IV and the DN7 national road. It has a length of 240 m with 7 variable spans (28 + 32 + 3x36 + 40 + 32 m). The bridge is a semi-integral structure having bearings and expansion joints only at the abutments. Given the long length of the semi-integral bridge (240 m) it is an engineering premiere.

The major advantages brought by the VTR<sup>®</sup> solution can be associated with the particularly simple execution of a structure in pronounced obliquity above two important communication ways (national road and main / magisterial railway line) without traffic interruption. In this case the sections of the steel girders transported on site were welded on the ground being afterwards directly positioned on the bridge's infrastructure (abutments and piers). The entire bridge's deck is made of prefabricated concrete cross beams and slabs bounded together through wide concrete joints allowing large overlapping lengths of the reinforcement bars.

Thus a facile and rapid solution has been applied, practically one span at a time has been worked at without needing temporary supporting structures.

- 1 Orastie Viaduct inauguration
- 2 VTR<sup>®</sup> steel girder end
- 3 Cross section of the Orastie Viaduct
- 4 Different working phases developed on the bridge's length

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The VTR<sup>®</sup> solution has many advantages in comparison to classical solutions:

- high degree of prefabrication - LEGO system,
- material consumption savings,
- light steel / concrete elements – easy maneuver,
- quick construction times,
- low costs, clean site, low environmental impact.

Since May 2013 the bridge is under traffic, the execution firm respecting its contractual commitments.

- 5 Bottom view of the bridge – construction phase
- 6 Joints concreting
- 7 Bottom view of the bridge

