The attempt on the world rail speed record

“Discovering the V150 trainset”

Press kit

RÉSEAU FERRÉ DE FRANCE | ALSTOM | SNCF

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The attempt on the rail speed record:

Centerpiece of the French Excellence in Very High Speed Rail Transport Program

France currently has 1,800 kilometres of high-speed railway lines, owned by Réseau Ferré de France (RFF), and a fleet of over 400 TGV™ trainsets, built by Alstom, enabling SNCF to operate more than 650 TGV™-branded services daily, throughout France. Very few companies in the world possess such expertise in very high-speed rail travel. An expertise accumulated through the constant development of new technologies, but also from over 26 years of experience.

In launching the French Excellence in Very High Speed Rail Transport Program, Réseau Ferré de France (RFF), Alstom and SNCF chose to pool their expertise to examine ways in which the performance of the French railway system could be improved and to position themselves for the long term as world leaders in very high-speed rail travel.

At the heart of this dedicated programme, the 2007 world speed record attempt takes on particular importance. Beyond the technical achievement, the record forms part of a programme of tests allowing data to be gathered on the performance of the infrastructure and of the rolling stock under extreme conditions, something it would be impossible to simulate in a laboratory. The trainset used in the record attempt allies technologies developed to make very high-speed rail travel possible and solutions that could be used in the next generation of high-speed trains.

A real-life test of the performance and reliability of the LGV™ and the materials, the record will, over the long term and for standard operating speeds, bring with it benefits for customers in respect of system design, both in terms of performance and in terms of safety.

BEHIND THE SCENES IN PREPARING FOR THE RECORD ATTEMPT

A shared ambition: to reach a speed of 540km/h

Born of a shared desire to develop the high-speed transport of the future, the V150 program was implemented progressively with a specific goal in mind: **the attempt to set a new world rail speed record**, the record that currently stands having been held since 18 May 1990 by the No. 325 TGV™ Atlantique trainset, with a speed of 515.3km/h.

Given the ambitious nature of the project, Réseau Ferré de France (RFF), Alstom and SNCF felt it necessary to examine its feasibility beforehand by determining:

- the **sector of the** East European LGV™ possessing the most suitable characteristics;
- the **power required** to set the record;
- the **technical means** needed to achieve this.

Once feasibility had been verified, RFF, Alstom and SNCF settled on the choice of the **LGV™** sector and on the type of trainset to use for optimum deployment of the programme.

As for the test zone, the choice fell on the section of the **East European** "**Ligne à Grande Vitesse" (LGV™[1], "High Speed Line")** located between Kilometre Points (PK) 250 and 170, in the East/West direction, for maximum accumulation of speed thanks to its profile.

In order to test the critical components of the two very high-speed ALSTOM train platforms, it was decided that the trainset used in the programme should be made up of:

- 2 TGV™[2] POS[3] power cars,
- 3 TGV™ double-decker ("Duplex") trailers
- of the principal draw gear of the new single-deck train developed by ALSTOM, the AGV™[4] ("Automotrice Grande Vitesse").

[1] *LGV™, trade brand for Alstom transport*
[2] *TGV™, Train à Grande Vitesse, is a trademark of the SNCF*
[3] *POS, Paris-Ostfrankreich-Süddeutschland*
[4] *AGV™, Automotrice Grande Vitesse, is a trademark of Alstom*

The unit is able to develop a total output of 19.6 MW.

With feasibility verified, RFF, Alstom and SNCF worked together to make possible an ambitious objective: to reach a speed of 150 metres per second, or 540km/h. This objective was to provide the inspiration for the name of the project and that of the train to be used in the record attempt, baptized “V150”.

Many months of preparation

Implementation of the V150 programme called for a long programme of preparation. A major technical exploit, the record attempt forms part of a broader campaign of trials for which a vast set of measures were deployed, both in terms of material and infrastructure.

Concentrated power on rails: the V150 trainset

The need to reach a target speed of 150m/s imposed exceptional constraints on its designers in terms of architecture, aerodynamics and power. The constraints were even more exceptional given that the aim was, for the first time in the world, to push a two-decked train to its limits. Designed using pre-existing components, fully 14 months were needed to complete manufacture of the V150 trainset.

- **A trainset designed using production components**

The V150 trainset was designed using production elements: **2 TGV™ POS** power cars destined for the East European LGV™ services and **3 TGV™ Duplex** (double-decker) coaches (in place of the 8 that make up a standard duplex trainset). This short architecture guarantees an optimum weight/power ratio and enables sufficient space to be freed up to install an on-board laboratory and for selected guests to be carried.

Modifications were made to the production material to enable it to reach and even exceed the mark of 150m/s. Wheel diameter was increased from 920mm to **1092mm**, in order to cover a greater distance each time they turn, while limiting the speed at which the motors rotate. In terms of aerodynamics, rolling resistance was reduced by 15% by removing external protrusions: streamlining of the roofing equipment and the underside of the body, the placing of rubber guards between the cars with a view to smoothing the external surface of the train from end to end. These measures were particularly necessary given that 95% of resistance at extreme speed is of aerodynamic origin.

All that then remained was the **power set-up**. The trainset that will attempt to set the record is the fruit of an encounter between two technologies:

- that of **concentrated power**, with the POS power car's asynchronous motors
- and that of **distributed power** with the permanent magnet synchronous motors of the 4th generation of very high-speed trains currently being developed by Alstom : AGV™ ("Automotrice Grande Vitesse").

The train boasts 6 bogie motors: 2 for each of the power cars and 2 AGV™ bogies under the central car.

The output of the power car motors was increased to 1,950 kilowatts, 68% higher than in production motors: that of the AGV™ motors to 1,000 kilowatts, equivalent to 40% more power when compared to future production motors.

In all, the train develops an output of **19.6 megawatts** (over 25,000 horsepower), almost twice as much power as developed by all the cars at the start of an F1 Grand Prix race. By way of further comparison, a conventional high-speed train deploys an output of 9.3 megawatts (12,500 horsepower).

- **Assembly completed in 14 months**

Development and construction of the V150 trainset represent the culmination of efforts that involved, over the course of 14 months and 100,000 hours, **60 people** at Alstom Transport's sites in France:

- La Rochelle for design and assembly,
- Belfort for the POS power cars,
- Reichshoffen for the construction of the duplex coaches,
- Le Creusot for the bogies,
- Ornans for the motors,
- Tarbes for the traction drives,
- Villeurbanne for the electronic systems.

Adaptation of the TGV™ POS power cars was handled by SNCF technicians. Delivered by Alstom's Belfort factory in July 2006, these two TGV™ POS power cars were taken to SNCF industrial maintenance and material establishment at Bischheim to undergo adaptations for the V150 programme. After several weeks of tests conducted at SNCF materials engineering centre at Le Mans and tests conducted at the railway testing agency at Vuitry sur Seine, over 60 engineers, technicians and workers from Bischheim worked on the two power cars to equip them for very high-speed rail travel.

Once the work was completed, the two TGV™ POS power cards of the 4402 trainset were sent to Alstom's workshops in Aytré to form the V150 trainset, by adding to them three duplex coaches:

- an **R1 coach** equipped for 1st class travel,
- an **R4 coach** with a bar body shell equipped with AGV™ technology by Alstom,

- an **R8 coach** converted on the ground floor into an Alstom laboratory and on the first floor into a laboratory for SNCF's own rail testing institute (AEF).

A total of **106 metres in length** and **weighing 268 tonnes**, the V150 trainset was then sent, on 19 December 2006, to SNCF's "Technicentre Est" at Pantin-Bobigny, which has since been responsible for daily maintenance of the trainset.

- **Key element of the V150 trainset: the on-board measurement laboratory**

The 2nd class duplex trailer has been equipped throughout as a laboratory on both levels by SNCF's internal testing institute and Alstom. The laboratory makes it possible to monitor all safety parameters put in place during the testing campaign and also to record the behaviour of the trainset at very high speed, thanks to the **600 sensors** installed on board and in particular monitoring:

- current collection by the pantograph, control of operating temperatures and the power transmission system,
- braking capacity and the trainset's adhesion to the track,
- dynamic stability,
- the overall safety levels observed during the tests, dependent on the three preceding factors.

On the day of the attempt on the speed record, 40 technicians will be on board in this laboratory to monitor the smooth operation of the runs.

Unique design for an exceptional event

The principal image bearer for the French Excellence in Very High Speed Rail Transport program, the V150 trainset therefore required a livery that would match the importance of the occasion.

The wrap for the trainset to be used in the speed record attempt takes its inspiration from the words of Roger Tallon, the famous French designed, who designed the line of the very first TGVs: "It is metal that flows through space. Passing through nature with records that will soon exceed 400km/h, any colour would stand out too much. Silver captures all the colours…".

Twenty years later, on the point of breaking new speed barriers, the V150 trainset remains faithful to this image, covered as it is in a "jet of chrome" against a black background. This bold association of the chrome and the black brings to mind the world of cutting-edge technology, high performance and absolute speed. The movement of the "jet of chrome" that extends the length of the train symbolises all the human energy brought together to meet this technological challenge.

The infrastructure adaptations required

For RFF, preparing for the new world record offers an opportunity to develop the technology of its materials and the performance of its infrastructure.

The run-up to entry into service of the East european LGV ™ (high-speed line) was seen as the perfect moment to conduct tests at very high speed. Following official inauguration by the partners and before the entry into commercial service of the **East European LGV™, on 10 June 2007**, therefore, RFF, Alstom and SNCF set themselves the challenge of beating the existing rail speed record, held by the No. 325 TGV™ Atlantique trainset since 18 May 1990.

While the layout of the East European LGV ™ is geometrically suited to this kind of high-speed test, on account of its horizontal and vertical variations, a number of adaptations were nevertheless felt necessary, to guarantee optimum levels of quality and safety, comparable to those observed during the previous record run, in 1990.

A **speed polygon** was set, with a view to determining the maximum potential speed on each of the sections of the test track and thus enabling the necessary adjustments and conversions to be performed. The **voltage of the overhead line** was also increased, to ensure maximum current collection above 500km/h. The addition of **capacitors** was found to be necessary in order to maintain the tension and compensate for the reactive energy produced by the test trainset. In terms of power levels, the catenary voltage was increased to 31kV by way of a set of automatic transformers installed at the exit from the “Trois-Domaines” substation, with the necessary adjustments also being made to the RTE power transmission network.

RFF also found it necessary to **immobilize the track points and swing noses** of the track equipment to be crossed at very high speed, to **grind** the track as a preventive measure and to perform additional track flattening and straightening measures.

Lastly, a high-mounted analogue radio network was put in place with a view to ensuring constant on-board contact, while a weather website dedicated specifically to the tests enabled maximum pressure to be determined twelve and then two hours before the test runs.

The trial programme made it possible to test many of the components and the performance of the infrastructure, something that will serve to improve knowledge of high-speed travel and the railway network as a whole:

- the behaviour of the track and the elements that make it up under high speed, with a view to limiting vibration and crossways movement;
- acoustic screens using various kinds of material (absorbent material, for example, in order to limit the spread of noise that is inherent to very high speed;

- blast effects;
- use of GSM rail and the reading of signalling beacons under extreme conditions…

A rail speed record attempt that rounds off a major testing program

The attempt on the rail speed record forms part of the testing campaign of the V150 programme, designed to test, measure and validate the dynamic stability of the trainset and bogies, current collection, the quality of wheel-track contact, the behaviour of the new AGV™ traction equipment - in particular, that of the permanent magnet motors – the behaviour of the track, tunnels and bridges and of the overhead line.

Since 15 January 2007, **a team of over 40 engineers and technicians** from RFF, Alstom and SNCF has been taking part in real-time tests as part of the V150 programme, with a view to demonstrating French Excellence in Very High Speed Rail Travel.

At the end of each run, the results recorded by the engineers have been immediately analysed, safety of operation proving to be a daily obsession during the campaign.

- **Gradually upping the power**

Beginning on 15 January 2007, power build-up took place gradually over 6 weeks spent on the East European line, in order to achieve speeds of **over 400km/h.**

The increases were programmed in stages, with limits set for each test run. In order to progress to the next stage, it was imperative that the measurement of critical parameters should be in line with the objectives, in terms of the vertical and transversal force observed on each wheel and each bogie, elevation of the pantograph, the quality of current collection, air pressure beneath the front fairing, the temperature of the principal electric and mechanical components…

*Using the V150 trainset, **40 test runs** were performed at speeds of over 450km/h, contributing to a total of **200 hours of tests** and **3,200 kilometres** covered.*

In addition, track quality controls were conducted using the Mauzin recording car between each day of tests, as well as sweeping of the track at 380km/h between each run conducted at very high speed.

- **Conclusive first results**

These measurements made it possible to verify the validity of the provisional models in speed ranges previously unexplored and, in particular, **to test, measure and validate under real-life conditions aerodynamic, acoustic, dynamic and vibratory phenomena.**

The AGV™ bogie behaved perfectly, even demonstrating lower track force than preceding generations. The same was true of the traction equipment and the pantograph, which proved their ability to perform at speeds far higher than those reached during commercial operation.

The composition of the trainset also made it possible to bring together all the components necessary to validate the two Alstom TGV™ Duplex AND l'AGV™ very high-speed platforms.

The data evidenced the safety margins of the French very high-speed rail model. Overall, there is a 200km/h difference between the speeds achieved by the V150 trainset and the 320km/h at which the East European LGV™ will operate from June this year, giving an indicator of the potential for gain in future generations of train.

With the TGV™, over 1.3 billion passengers have been carried at speeds of between 260km/h and 300km/h over the past 26 years, in complete safety. At a time when commercial speeds in some countries are moving towards 350km/h, the V150 test campaign conducted by the three partners has enabled the superior limits of the French system to be extended to maintain a safety margin of at least 200km/h.

Above and beyond achieving a rail speed record, therefore, reliability of the railway system as a whole has been enhanced.

Strict procedures before the surge

Extremely strict procedures were put in place at the beginning of each journey to the high-speed test zone. Following definition of the speed to be reached during the trial, the head of tests need to be sure that the technicians and engineers were in their places on board the trainset and to verify that all the necessary safety conditions had been fulfilled. The first piece of information he had to obtain was whether the train had clearance to operate over the test track, communicated from the 4402 sounding trainset that would run over the track beforehand with a view to detecting any anomaly.

The head of tests also had to obtain assurance from the Pagny sur Moselle control station (PCD) that the test route had been established and that all the necessary safety personnel were in place, as well as satisfying himself that the voltage supplied to the overhead line by the Trois-Domaines substations, located close Meuse station, was running at 31kV.

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About Réseau Ferré de France

Réseau Ferré de France (RFF) is a government-owned firm established in 1997. Its 29,000 kilometres of active track constitutes one of Europe's largest rail infrastructures, while it operates the leading network of high-speed lines (LGV ™).

A decentralised organization, Réseau Ferré de France, operates at the heart of the rail system and works to develop local, regional, national and international transport links:

- The RFF is in charge of allocating train paths, thus enabling train traffic organization in terms of both space and time;
- To maintain its network (which is delegated to SNCF) the RFF determines development principles and objectives in line with local transportation requirements;
- The RFF is responsible for developing rail solutions in France, and leads projects (which include mainly regional partners) that combine town and regional planning, budgetary requirements and sustainable development,
- The RFF organizes the use of lines by freight as well as passengers trains. It is responsible for modernising the network by carrying out the rail aspects of government contracts;
- As the general contractor, the RFF is in charge of constructing LGVs™ (high-speed train lines), and is assisted by a range of French and European project managers;
- In the area of national heritage, the RFF's policy involves anticipating rail transport needs while taking into account the city and regional planning projects of public authorities.
- With the French Excellence in Very High-Speed Rail programme, the RFF aims to improve global long-term performance across the network, by applying knowledge gained in high-speed tests concerning electricity supplies, noise, ballast calculations, the durability and resistance of infrastructure, and signalling.
- With the opening of the East-European LGV™, the world's fastest LGV ™, the RFF will enter into a new era of high-speed rail transport. Commercial services are due to be launched in June, and the RFF is currently involved in projects to further improve the quality of service and ensure its regularity, and to develop connections between the LGV ™ and traditional rail lines.

About Alstom Transport

World leader in very high-speed rail transport and number two in urban transport, Alstom Transport holds an 18% share of the world rail transport market. With sales of 5.1 billion euros and an operating margin of 6.3%, Alstom Transport is the most profitable manufacturer in the market.

Its range of products and services includes includes rolling stock, infrastructure and signaling equipment, in addition to maintenance. With a presence in over 60 countries, ALSTOM Transport employs 26,000 staff worldwide.

From the first TGV™ (Very High Speed Train) put into service by the French transporter SNCF in 1978, to the future East European TGV™ (which will provide service between Paris, Frankfurt, Stuttgart, Luxembourg and Zurich) – not to mention the South Korean TGV™, the Eurostar and Thalys – Alstom has established itself as the world leader in tilting trains, high speed trains (over 200 km/h) and very high speed trains (over 300 km/h).

Alstom ranks second in the urban transport market. The company has supplied metros for many cities throughout the world, including Paris, London, New York, Washington, Caracas, Singapore, Shanghai and Istanbul. More than 24 cities in France, Italy, Spain, Ireland, Germany, Australia, the Netherlands, Algeria, Tunisia and Israel have chosen ALSTOM to supply their tramways.

Alstom has also been successful with its CITADIS tramway model. To date, over 870 Citadis have been ordered by 24 cities across the world. The company expects to exceed that 1,000 mark in terms of the number of Citadis sold by the year 2009.

About SNCF

SNCF transports over 900 million passengers each year throughout its network. Everyday, it operates 13,400 trains: high speed trains bearing the TGV™, Eurostar and Thalys marque, Transilien commuter trains which serve the Ile-de-France region surrounding Paris and its 10 million inhabitants, Corail Téoz, Corail Intercités and TER intercity trains covering all of France, as well as SNCF freight trains which arry 300,000 metric tons of merchandise every day while conforming to the strict requirements of the company's sustainable development policy.

SNCF, a leading employer in France with 169,000 staff. The company actively develops world-class skills and competencies in a range of 200 different trades and professions.

SNCF also brings together more than 650 companies under SNCF Participations, providing services in a wide range of transport-related activities: urban services, intermodal information, freight car rentals, combined transport, engineering, exporting of expertise, freight terminal services, etc.

SNCF passenger traffic has grown almost continually over the past decade, gaining market share over air travel. Traffic will be stepped up even further in June 2007 with the opening of the East European TGV™. This brand new, 300-kilometer, high-speed line will provide service at 320 km/h, a speed never before achieved on regular service runs. Its trains will feature original designs by Christian Lacroix, with MBD Design and Compin. The line will serve 20 cities in eastern France, with significantly reduced travel times. For example: Paris-Strasbourg in 2 hours 20 minutes, instead of the current 4 hours! And a tremendous network of inter-regional links will be developed, connecting eastern France with Roissy-Charles de Gaulle airport, the cities of Lille, Rennes, Tours, Bordeaux and many other destinations. And beyond the French border, Luxembourg, Frankfurt, Stuttgart, Munich, Basle and Zurich will also be accessible through the new TGV™ line.

GLOSSARY

Aeroacoustics (noise): aerodynamic noise emitted by a vehicle passing through air. The faster the vehicle goes, the more the noise that it produces is connected with its penetration through air. At 300km/h, half of the noise emitted by a TGV™ is attributable to rolling noise and half to aerodynamic phenomena. Work on aerodynamics is one of the principal areas of research for reducing the noise emitted by high-speed trains.

AGV™: "Automotrice à Grande Vitesse", ALSTOM's future generation of high-speed train. The AGV™ incorporates the articulated structure of the TGV™ and complements it with a distributed power system. On a TGV™, the power set-up is concentrated in the two power cars to the front and rear of the trainset, whereas on the AGV™, all the axles are motors.

Articulated (trainset): a trainset on which the bogies are located between the coaches, instead of underneath them as on a traditional train. This design, specific to French high-speed trains (TGV™ and AGV™) offers numerous advantages: a reduction in the number of bogies, greater comfort in operation, rigidity…

Ballast: bed of gravel on which the track sits. The ballast used on the LGV™ is larger, harder and more solid than that found under traditional tracks. A TGV™ sits on a 35 centimetre-thick "mattress" of ballast.

Concrete (track): rail track set on a bed of concrete, instead of ballast. The advantages of this formula: maintenance-free and the opportunity to create more pronounced banking. RFF is experimenting with 1,800 metres of concrete track on the East European LGV™, in Seine et Marne. This stretch will be operated over daily at a speed of 320km/h from June 2007.

Bogie: mobile unit on which are fixed the axles of rail vehicles (power cars, coaches and wagons). The bogies pivot independently of each other, allowing the vehicle to negotiate bends. On the TGV™ and AGV™, the bogies are located between the carriages and not beneath them, as on traditional trains.

Catenary: an aerial line that enables the traction current to be supplied to the railway stock. The catenary (overhead line) is made up of 4 components: a contact wire, on which the pantograph (located on the roof of the train) collects the current, a carrier that holds the wire, a steady arm and a mast that keeps everything firmly grounded.

Duplex: the name given to double-decked TGV™ trains, in service since 1995. Produced entirely in aluminium, the TGV™ Duplex has a transporting capacity 35% greater than that of traditional trainsets.

ERTMS: The European Rail Traffic Management System is a new on-board signalling system that allows for interoperability between European trains on European railway networks. Developed in France, it will be used on the East European LGV™ for the first time.

GSM – Rail: system of transmission between trains an rail network operations centres. Using GSM technology, the system makes it possible to take into account the speed of trains following each other on a single track and adjust braking procedures, reduce safe distances and therefore increase traffic. RFF is rolling it out gradually across its network.

IRIS 320: TGV™ trainset put into service in 2006 that allows the entire standard – speed French rail network to be sounded at normal commercial speeds (up to 320km/h) without disrupting traffic. Equipped with 150 sensors and 20 cameras, IRIS 320 checks the track, signalling and telecommunications, all at the same time.

Pantograph: articulated mechanism placed on the roof of a rail vehicle, enabling it to collect current by rubbing on the overhead line ("catenary").

POS: name given to the TGV™ trainsets to be used on the East European line. POS is an acronym for "Paris – Ost – Südeutschland".

Energy recovery (in braking): system of electric braking that allows the current produced by the motors, functioning as alternators, to be recovered and re-channeled to the overhead line.

V150: name given to the trainset to be used in the 2007 attempt on the rail speed record and the French Excellence in Very High-Speed Rail Transport programme. The name "V150" refers to the rate of 150 metres per second, equivalent to a speed of 540 km/h.

WIMAX: technology that allows better broadband links to be created in high-speed trains by combining satellite and WiFi reception, for passages through tunnels. This technology will shortly be employed on the trainsets of the East European TGV™, making it possible to surf, via broadband, at 320km/h.

TECHNICAL ARRANGEMENTS TO RECEIVE THE PRESS ON THE DAY OF THE RECORD ATTEMPT

Control centre

Accredited attendees will be accommodated in the control centre on the day of the record attempt.

The control centre is located at Champagne-Ardenne TGV™ station, in the commune of Bezannes.

Opening time for accredited press attendees: on the day of the record attempt, from 7am.

The press department has prepared maps showing access to the train's departure zone, the zone where the attempt on the record will take place and the arrival point (control centre).

Use of high-frequency audio systems must be reported to the sound technicians in the control centre

Technical resources available to the press:

1) Press conference zone

Audio stations
Simultaneous French/English translation
No WiFi connection

2) Press room

The press room is equipped with phone lines, ADSL and numeris connections.
Connection cables are not supplied.
Printers, photocopiers and fax
No WiFi connection

3) Technical and transmission zone

Private site, strictly reserved for technical live transmission vehicles (requires reservation, see contact details for press attendees).
Arrival of vehicles on the day of the record attempt must occur between 7am and 10am.
Distance from the control centre: 100m
Distance from the tracks: 150m
Parking reserved for accompanying cars next to the broadcasters' area.

Energy: radio and TV cars and transmission cars must be independently powered.

On request:
Telephone and numeris lines.
Catering for the technicians.

International signal

Subject: *A worldwide first, live coverage of the rail speed record on the East European LGV*™.

Free availability of a clean international signal.
Insertion of the kilometre points, the speed of the V150 trainset and the maximum speed.

Place: Champagne-Ardenne TGV™ station

Provisional date: 3, 4 or 5 April 2007

Provisional duration of signal: 35 minutes

Provisional time of signal: 12.55pm–1.30pm, French time (11.55am-12.30pm GMT)

Filming equipment:

- Ground views of the departure:	1 camera
- Ground views of the record zone	5 cameras
- Aerial views	1 camera
- Train interior and exterior views	10 mini and 3 large cameras
- Ground views of the arrival	1 camera

Available at SERTE in Paris, by satellite or on-site.

Photo library
Free availability of photos of the record run
Accompanying photo credits must be mentioned.
Availability over dedicated ftp.
Visuals are available from www.rameV150.com, using the following codes:
Login: V150
Password: presse

Press technical reception:
Hélène TZARA (Auditoire) - tel: +33 6 10 18 80 90
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