December 20, 2013
East Japan Railway Company

Results of provisional selection of manufacturer to be commissioned for design work in order to consider possible introduction of CBTC in our railway system

○ JR East is aiming to drastically change and improve our Tokyo Metropolitan Area transport system through innovations that incorporate a conceptual breakthrough and are completely free from conventional ways of thinking. Our final objective is to achieve innovations in technology (such as elimination of the need for track circuits and reduction in the number of cables), and operational innovations (such as bi-directional same-track operation). With these objectives, we have been moving forward to consider the introduction of the CBTC system on our Joban Local Line (a local line which runs between Ayase and Toride). CBTC is a communications-based train control system which is rapidly coming into use on metropolitan railways and other transport systems worldwide.

○ Since February 2013, we have made a detailed examination of the system with each of the two nominated manufacturers, ALSTOM and THALES. In conclusion, we have provisionally selected the manufacturer to be commissioned for the design work in the year 2014 for the CBTC introduction.

1. Name of the provisionally selected manufacturer

THALES

2. Details of the provisionally selected manufacturer

○ THALES

Location of Group HQ: Neuilly-sur-Seine, Paris, France
Main areas of business: Defense, Security, Aerospace, Transport
Consolidated revenue: 14.2 billion euro (Fiscal year ended December 31, 2012)
Consolidated number of employees: 66 thousand (December 31, 2012)

3. Steps in our provisional selection of the manufacturer

In June 2012, JR East placed an announcement on our website homepage calling for expressions of interest from manufacturers for the introduction of CBTC on the Joban Local Line. As a result, we had received expressions of interest from 10 manufacturers both within Japan and overseas. JR East then requested that the manufacturers submit proposals including a system outline. As we announced on February 2013, we reviewed all of the proposals thoroughly, made comparisons, and selected the two manufacturers, ALSTOM and THALES, with whom we will continue to work to discuss more system details.

From February 2013, we examined the details of the system with the two nominated manufacturers. In conclusion, we have provisionally selected one of the two manufacturers, which both develop highly advanced technologies.

Each of the two manufacturers made sincere examinations and meaningful proposals for nearly one year, based on a thorough understanding of our requirements on the safety, the quality of transportation and the passenger service.

4. Criteria for provisional selection of the manufacturer

We made a comprehensive comparison between the two nominated manufacturers based on the proposal documents, the estimated costs, and the examination work conducted since last February. The comparison was made from multiple perspectives such as the feasibility of the required functions, safety, operating rate, maintenance system and price.

5. Plans for the future

We will negotiate the system design contract with THALES. If we reach an agreement, we will change the provisional selection into an official decision and commission the design work for CBTC introduction to the manufacturer. The design work is expected to last about one year.

If we determine that our requirements for the CBTC system would be achieved based on the outcome of the design work, we are planning to ask the manufacturer to undertake the manufacturing and construction work for introduction of the CBTC system.

We plan that the actual introduction of CBTC to our Joban Local Line will occur around 2020.

6. Outline of “CBTC” (please refer to attached sheet)

“CBTC”, “Communications-Based Train Control System,” is a train control system utilizing radio technology which has been introduced widely around the world, on nearly 100 lines, mainly subways and monorail systems. (It has not yet been introduced in Japan.)

It is different from conventional train control systems where train positions are detected using track circuits. In the CBTC system, trains themselves recognize their own positions all the time, and transmit these positions to ground equipment by radio. This enables the ground equipment to control the speed of the trains by sending information to indicate to each train where it must come to a full stop. With CBTC, track circuits are no longer necessary, and the number of cables used can be reduced substantially.

In many cases, the CBTC system is not only a “train control system,” but also functions as a “traffic management system,” and is a total transport control system that can manage bi-directional same-track operation.

Outline of CBTC

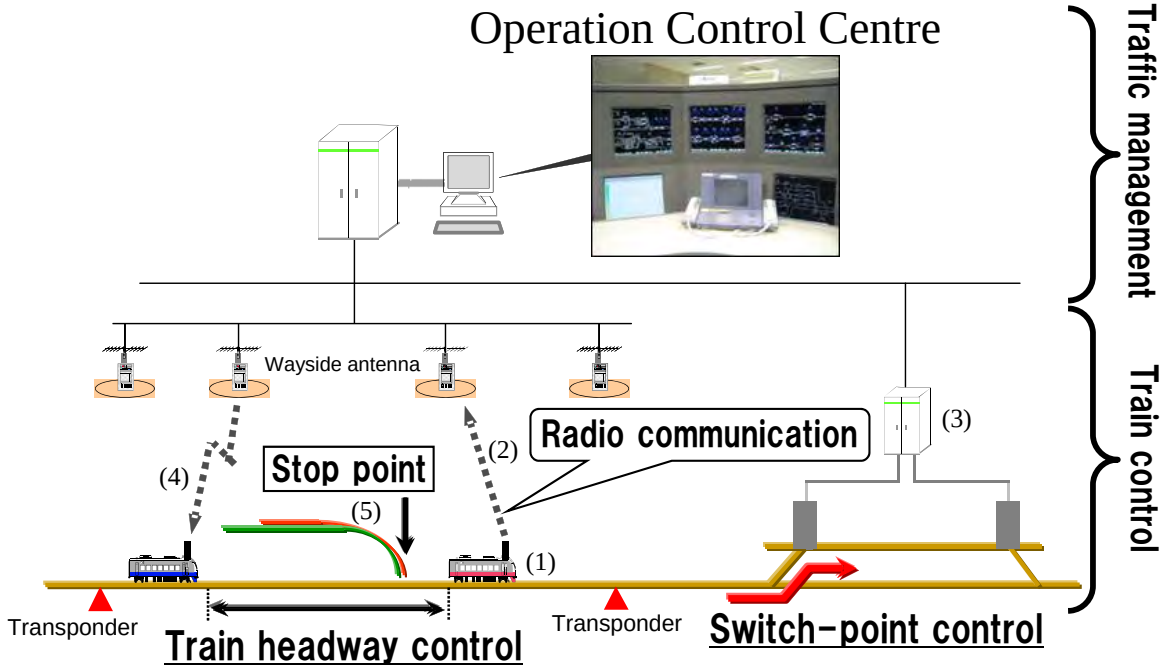
Attached sheet

JR East is now considering the introduction of CBTC, a communications-based train control system, on the Joban Local Line between Ayase and Toride.

Configurations and features of the CBTC system

【Features】

1. CBTC is a comprehensive and integrated system capable of train control (controlling switch points, train headways) and traffic management.
2. It is completely different from conventional signalling systems.
   (1) Track circuits are no longer necessary
   (2) Information is communicated by radio
   (3) Train headways are controlled without blocks.
3. It can manage *bi-directional same-track operation** and other operations.
   ** trains can run in both directions under the control of the signalling system on both the inbound line and the outbound line*
4. It is already in use on nearly 100 lines worldwide.



(1) Trains always recognize their own position by transponders and their axle rotation.
(2) Trains transmit their own position to the ground equipment by radio.
(3) Ground equipment calculates the point where a following train must come to a full stop, based on the distance from the preceding train.
(4) Ground equipment sends the information about this point to the following train by radio.
(5) The following train sets its speed profile so that it can stop before reaching this point.

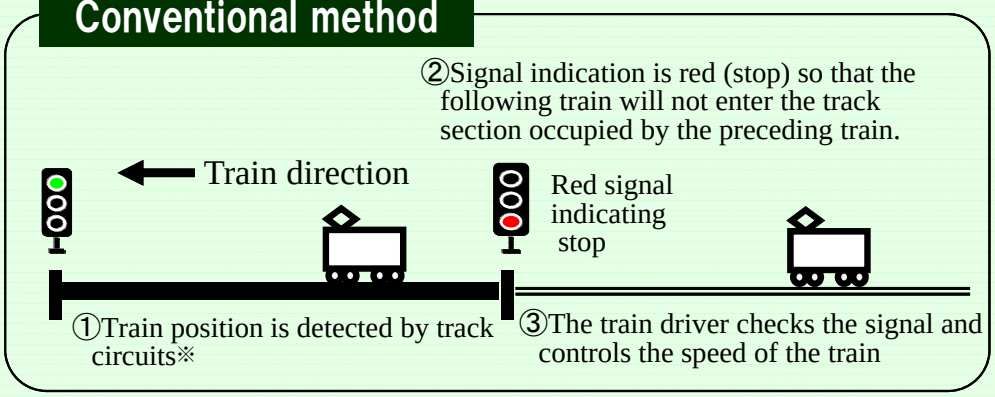
Examples of functions provided by CBTC on railways worldwide

No track circuits are required, and fewer cables are needed

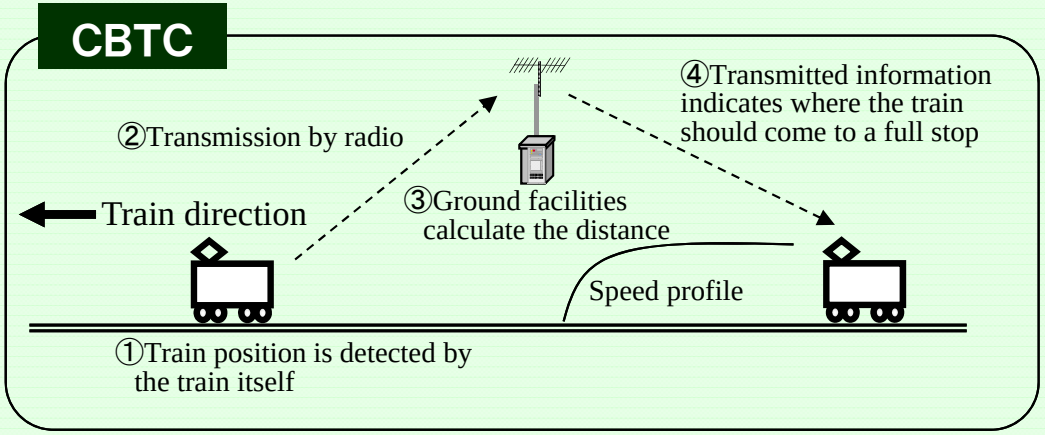
Train positions are detected without using track circuits and transmitted by radio.

・Simplified ground facilities, and fewer troubles involving signals

Conventional method



CBTC



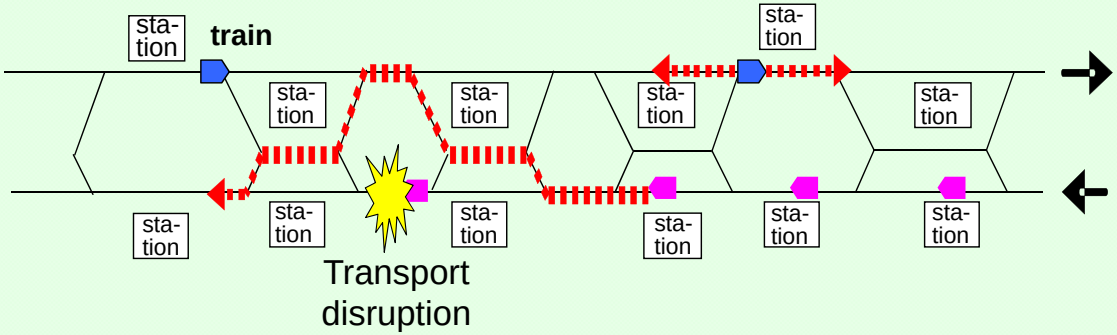
※A “track circuit” detects train positions electrically by sending electric current through the rails.
（This method is used on many conventional railways.）

Bi-directional same-track operation

Inbound and outbound trains can both operate safely on a single track under control of signals. ※

・If there is a transport disruption that blocks one of the two tracks, trains can resume operation quickly by using the other track.

・This capability permits more time for track maintenance by allowing temporary single-track operation at times when trains are less frequent and on sections that are less congested.



※Trains can also operate toward the opposite direction by using signals.

Railways of CBTC System in the World

The CBTC system is already in use on nearly 100 lines worldwide.

(Remark) The CBTC system has never been introduced to Japanese railway before.

Country	Railway
U.S.A.	New York City Subway (L Line), Philadelphia SEPTA (Green Line), etc.
Canada	Vancouver SkyTrain (Expo Line, Millennium Line, Canada Line), etc.
U.K.	London Underground (Jubilee Line), Docklands Light Railway (London), etc.
France	Paris Metro (Line 1, Line 3, Line 5, Line 14)
Spain	Madrid Metro (Line 7), Barcelona Metro(Line9), etc.
China	Beijing Subway (Line 2, Line 4, Line 8-10, Line 15, Fangshan Line, Daxing Line, Airport Express), Shanghai Metro (Line 6-11), Chongqing rail transit (Line 1, Line 3), Hong Kong Metro MTR (West Rail Line, Ma On Shan Line, Disneyland Line), etc.
Korea	Busan-Gimhae Light Rail Transit, etc.
Others	Dubai Metro (Red Line, Green Line), Singapore Metro (Northeast Line, Circle Line), etc.