

Title (en)

System for occupancy detection in a railroad line and for digital communication with trains that run along said railroad line

Title (de)

System zur Gleisfreimeldung einer Eisenbahnstrecke und zur Kommunikation mit Zügen auf dieser Strecke

Title (fr)

Système de détection d'une occupation de la voie ferroviaire et de communication avec des trains circulants sur cette voie

Publication

EP 1338492 A1 20030827 (EN)

Application

EP 03100263 A 20030210

Priority

IT SV20020008 A 20020222

Abstract (en)

A system for occupancy detection in a railroad line, or the like, and for digital communication with trains that run along said railroad line, which uses coded signals transmitted to the tracks, said tracks being segmented into various galvanically insulated sections, and each track section being connected to a control and monitoring subunit which communicates with a central control unit. According to the invention, each subunit for controlling and monitoring the means that generate a signal when a train is detected on the corresponding section, which signal is transmitted by the transmitter associated to an end of the block to the associated receiver at the opposite end of the block in the direction opposite to the train running direction, and which train detection signal is provided before transmitting a carrier having a predetermined fixed low frequency to a phase modulator of the track segment, which modifies the carrier phase for predetermined time intervals between two definite phases, with reference to a reference signal having the carrier frequency, the time intervals between the frequency steps of the two phase settings having a predetermined length, and said train detection signals being uniquely differentiated for each block, by setting different time intervals between two successive phase steps. <IMAGE>

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IPC 8 full level

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CPC (source: EP)

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Citation (search report)

- [A] US 4740972 A 19880426 - RUTHERFORD JR DAVID B [US]
- [A] EP 0878373 A2 19981118 - HITACHI LTD [JP]
- [A] GELLERMANN W D ET AL: "LZB 700 - DIE MODERNE ZUGBEEINFLUSSUNG MIT INFORMATIONSMUEBERTRAGUNG UEBER DIE FAHRSCIENEN", SIGNAL + DRAHT, TELZLAFF VERLAG GMBH. DARMSTADT, DE, vol. 84, no. 6, 1 June 1992 (1992-06-01), pages 158 - 160,162-16, XP000297102, ISSN: 0037-4997

Cited by

US7547988B2; CN114475697A; CN103534162A; CN106347414A; RU2486091C1; CN111884733A; US2018367614A1; CN110049911A; JP2020523236A; CN107867308A; CN114264897A; CN114264898A; CN115208321A; GB2426110A; GB2426110B; AU2005210648B2; US8998147B2; WO2007079700A1; US7315770B2; US8660215B2; US8590844B2; WO2012156268A1; WO2018231466A1; WO2005075273A1; US8500071B2; US9248849B2; US8297558B2; EP1979815B1; EP2390158A2; EP2090491A1

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