SIBAS 32
List of Abbreviations

CCU - Central Control Unit
TCU - Traction Control Unit
TCU - Train Control Unit
BCU - Brake Control Unit
MMI - Man-Machine Interface
MVB - Multi Vehicle Bus
SKS - SIBAS Klip Station
WSP - Wheel Slip Protection

CCU

- CCU is the main control system at the heart of each train
- There are two CCU's on a train located in cars 200 and 400 (C and D) (Desiro rus)
- CCU also controls the display
- After activating of the train one of the CCU's are assigned as a ' Master ' unit and the other as a 'Slave' .
- The MASTER and SLAVE modes are unit specific and can be assigned to either of the CCU's after restarting of the system
- If one of the CCU's fails the operating one takes on all the functionality and control of the defective one .
- A current SLAVE unit becomes a MASTER if the original MASTER is lost .

MVB

- The units are connected to each other via MVB
- MVB has line A and line B in case of the lines fails MVB will still be available

Klip

- All switches , buttons and consumers that are controlled by CCU's are connected to KLIP stations
- KLIP stations are input/output devices that are used to significantly reduce the length of the CCU's control lines .

TCU

- TCU processes propulsion and braking (electro-dynamic)commands and transmits them to the traction inverter

BCU

- The CCU calculates EP (Electo-Pnuematic) and ED (Electro-Dynamic) brake and transmits the values to BCU's and TCU's .

TCU (Train Control Unit)

- Data exchange via the MVB Communication module with the other basic units

- Data exchange via MVB with ACU , BCU , TCU ,KLIP etc. of the own 3 car basic unit
- Control of power switches
- Control of the defined tractive and regenerative brake effort
- Monitoring (power switches , pressure ,temperature , current , voltage and other values)
- Generating control signals for the traction converters
- Diagnostics

- These tasks are performed by the TCU via hardware and software components of the TCU
- TCU SIBAS 32 consists of The Central Processing Unit (ZP) and three sub computers (signal processors)
- The Central Processing Unit is responsible for High - Level Traction Functions
- There are two lower - level signal processors for the two Power Width Modulated Inverters (PWR)
- One sub computer (4QC) works with the two 4 Quadrant Choppers
- The CPU also enables closure of the main circuit breakers and controls the state various internal breakers and train wired lines
- The CPU provides monitoring and protection functions to detect faults in the system .
- Diagnostic information is provided to a driver and maintenance staff . With a help of a PC and special software tool (SIBAS 32 Customer Montor / Moni32) diagnostic files can be read and / or downloaded from the TCU memory .
- SIBAS 32 is the main control system on a train .

- Processing digital and analog signal is carried out via SIBAS-KLIP stations that incorporate I/O devices .
- Front connectors of a KLIP stations link the I/O device to various internal devices and sensors .
- SIBAS -KILIP is connected to the CCU by the MVB bus

WTB

- WTB bus is used for control and data exchange between several train-sets joined together .
- Shared control via WTB line allows to use several trainsets (usually two) as one train .