# SwRS

[iTC\_CC\_ATP-SwRS-0176]

if ([OdoState](#OdometerState)(k) == **NOT\_INIT**):

if ([WFStop](#WheelFilteredStopped)(k) == **True**):

[WMinMo](#WheelMinimumMovement) = 0

[WMaxMo](#WheelMaximumMovement) = 0

else:

[WMinMo](#WheelMinimumMovement) = —[AS](#ATPsetting).MaxPC

[WMaxMo](#WheelMaximumMovement) = [AS](#ATPsetting).MaxPC

if (([OdoState](#OdometerState)(k-1) == **NOT\_INIT**)

and (not [[WFStop](#WheelFilteredStopped)](#WheelStopped)(k) and not [UnSenT](#UnconsistentSensorTest)(k))

and ([[WFStop](#WheelFilteredStopped)](#WheelStopped)(k-1))):

[OdoState](#OdometerState) = **WAIT**

if (([OdoState](#OdometerState)(k-1) == **NOT\_INIT**)

**and** [UnSenT](#UnconsistentSensorTest)(k)):

[OdoState](#OdometerState) = **INVALID**

if ([OdoState](#OdometerState)(k-1) == **WAIT**

and [OdoState](#OdometerState)(k) == **WAIT**):

[InitTime](#InitializationTimer) = [InitTime](#InitializationTimer)(k-1) + 1

elif ([OdoState](#OdometerState)(k-1) != **WAIT**

and [OdoState](#OdometerState)(k) == **WAIT**):

[InitTime](#InitializationTimer) = 1

else:

[InitTime](#InitializationTimer) = 0

if (([OdoState](#OdometerState)(k-1) == **WAIT**)

and [[WFStop](#WheelFilteredStopped)](#WheelStopped)(k)

and not [MeterCPR](#OdometerCogPositionReady)(k)

and not [UnSenT](#UnconsistentSensorTest)(k)

and ([InitTime](#InitializationTimer)(k) < [AS](#ATPsetting).OdoInitTimeout)):

[OdoState](#OdometerState) = **NOT\_INIT**

if ([OdoState](#OdometerState)(k-1) == **WAIT**

and [MeterCPR](#OdometerCogPositionReady)(k)

and not [UnSenT](#UnconsistentSensorTest)(k)

and ([InitTime](#InitializationTimer)(k)< [AS](#ATPsetting).OdoInitTimeout)):

[OdoState](#OdometerState) = **INIT**

if (([OdoState](#OdometerState)(k-1) == **WAIT**)

and (([InitTime](#InitializationTimer)(k)>= [AS](#ATPsetting).OdoInitTimeout)

or [UnSenT](#UnconsistentSensorTest)(k))):

[OdoState](#OdometerState) = **INVALID**

if ([OdoState](#OdometerState)(k) == **WAIT**):

if (([TFE](#TrainFrontEnd)(k-1) == **END\_2**) or ([NoUndetectableDanger\_2](#NoUndetectableDanger_2)(k-1) == **True**)):

[WMinMo](#WheelMinimumMovement)(k) = [WMinMo](#WheelMinimumMovement)(k-1) + [AS](#ATPsetting).MaxPC

[WMaxMo](#WheelMaximumMovement)(k) = [WMaxMo](#WheelMaximumMovement)(k-1) - [AS](#ATPsetting).MaxPC

else:

[WMinMo](#WheelMinimumMovement)(k) = [WMinMo](#WheelMinimumMovement)(k-1) — [AS](#ATPsetting).MaxPC

[WMaxMo](#WheelMaximumMovement)(k) = [WMaxMo](#WheelMaximumMovement)(k-1) + [AS](#ATPsetting).MaxPC

if ([OdoState](#OdometerState)(k) == **INIT**):

[MotionSpAv](#OdometerMotionAndSpeedAvailable)(k)\

= (([OdoState](#OdometerState)(k) == **INIT**)\

and (([WFStop](#WheelFilteredStopped)(k) == **True**)\

or ([MeterCPR](#OdometerCogPositionReady)(k) == **True**)))

else:

[MotionSpAv](#OdometerMotionAndSpeedAvailable) = **False**

if (([OdoState](#OdometerState)(k) == **INIT**)

and ([MotionSpAv](#OdometerMotionAndSpeedAvailable)(k) == **False**)

and (([TCer](#TeethCounter)(k) - [TCer](#TeethCounter)(k-1)) <= 1)):

[MotionNotSA](#OdometerMotionAndNotSpeedAvailable) = **True**

else:

[MotionNotSA](#OdometerMotionAndNotSpeedAvailable) = **False**

if (([OdoState](#OdometerState)(k-1) == **INIT**)

and (([UnSenT](#UnconsistentSensorTest)(k) == **True**)

or (not [MotionSpAv](#OdometerMotionAndSpeedAvailable)(k)

and not [MotionNotSA](#OdometerMotionAndNotSpeedAvailable)(k))

or (TimeLastingIn([MotionNotSA](#OdometerMotionAndNotSpeedAvailable))

> [AS](#ATPsetting).OdoInitTimeout)

or (oRTOD

([MotionNotSA](#OdometerMotionAndNotSpeedAvailable)) > 8 \* cogs))):

[OdoState](#OdometerState) = **INVALID**

if ([OdoState](#OdometerState)(k-1) == **INVALID**

and [[WFStop](#WheelFilteredStopped)](#WheelStopped)(k)

and not [UnSenT](#UnconsistentSensorTest)(k)):

[OdoState](#OdometerState) = **NOT\_INIT**