TargetLink Reloaded

The new version of our production code generator TargetLink that comes with Release 6.1 emphasizes code efficiency and AUTOSAR support. The code that it generates is now more efficient than ever, particularly where vector signals are involved. The new version also supports AUTOSAR standard 2.1 and the current The MathWorks Release 2007b.

- **Efficient code for vector signals**
- **Up-to-the-minute AUTOSAR support**
- **Flexible selection of MATLAB version**

AUTOSAR

Enhanced Code Efficiency

TargetLink 2.3 is particularly geared to maximizing code efficiency in production applications. Even though efficiency was already very high, it has been made even better by the following optimizations:

- As an option, code for blocks with vector signals can be generated as loops instead of single statements, which considerably reduces ROM consumption. TargetLink identifies vector sections that have the same characteristics and creates loops for them if a specified threshold is exceeded.
- To avoid unnecessary intermediate variables at the borders to atomic subsystems, code optimization now appropriate analysis functions.
- The procedure for analyzing whether to calculate individual blocks in every time step has been refined. This saves execution time, as more blocks can be moved to conditionally executed branches.

Support for AUTOSAR Standard 2.1

In response to the growing importance of AUTOSAR, TargetLink 2.3 includes the following new features:

- Support for AUTOSAR 2.1 in addition to Version 2.0 SP3, particularly addressing calibration and measurement
- Mode switch events for switching ECU modes during the execution of AUTOSAR runnables
- Code efficiency of implicit sender-receiver communication enhanced by optimizing out superfluous stack variables

Choice of Four MATLAB® Versions

One of TargetLink's useful features is that a single version supports several MATLAB versions. This greatly benefits you as a user, as you can:
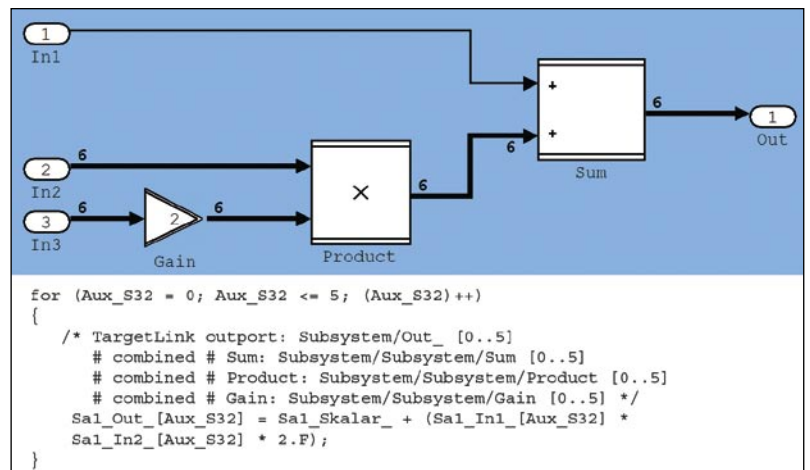
- Use the same TargetLink version for different MATLAB versions – in different projects, for example.
- Upgrade MATLAB without having to install a new TargetLink version.
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- TargetLink 2.3 supports the last four releases: R2006a+, R2006b, R2007a+ and R2007b.

Further enhancements include options for generating table code without a map structure and automatic adjustment of the references to a dSPACE Data Dictionary object when it is renamed or moved. Target simulation support for the Infineon XC2000 processor in conjunction with the TASKING compiler round off the new version.


```
for (Aux_S32 = 0; Aux_S32 <= 5; (Aux_S32)++)
{
    /* TargetLink outport: Subsystem/Out_ [0..5]
       # combined # Sum: Subsystem/Subsystem/Sum [0..5]
       # combined # Product: Subsystem/Subsystem/Product [0..5]
       # combined # Gain: Subsystem/Subsystem/Gain [0..5] */
    Sa1_Out_[Aux_S32] = Sa1_Skalar_ + (Sa1_In1_[Aux_S32] *
        Sa1_In2_[Aux_S32] * 2.F);
}
```

▲ *TargetLink 2.3 can roll the code generated for blocks with vector signals into loops.*