

# Top-Level Review for Porting GE Fanuc/SBS 1553 Programs to Alta Data Technologies

(Please note: GE Fanuc/SBS Function Call Names are Copyright GE Fanuc Intelligent Platforms;  
Alta Function Call Names are Copyright Alta Data Technologies LLC)

# Typical RT Applications

## SBS API Functions

### Init Device

- sbs\_init\_device()
- m1553\_set\_mode()
- Required because GE/SBS Does Not Offer mRT in Low Cost Cards.

### Init RT Function

- m1553\_define\_rtsa() – loop for all SAs
- No RT INIT Function – Functions are Not Managed in a Modular Design.

### Turn On RT

- sbs\_start\_io()
- SBS Code does not manage RT, BC and Mon Functions Separately.

### Read & Write Data

- **USER APPLICATION CODE GOES HERE**
- m1553\_read\_sa\_buffer()
- m1553\_write\_sa\_buffer()
- **Different function calls required for different Mode Codes – Not a simple Offset. No Multi Buffering of Mode Codes – May Drop MC Data**
- SBS Has Different Data Structures for all 1553 Functions.

### Close Function & Card

- sbs\_stop\_io()
- sbs\_close\_device()
- Note: Closes ALL Channels – NOT Channel Independent

## Alta API Functions

### Init Device

- ADT\_L1\_1553\_InitDefault()
- Alta Channels are Independent Devices! Better.
- No Set Mode Required Because Alta Cards are mRT – Better.

### Init RT Function

- ADT\_L1\_1553\_RT\_Init()
- ADT\_L1\_1553\_RT\_SA\_CDPAllocate() – loop for all SAs
- Auto Clears Buffers

### Turn On RT

- ADT\_L1\_1553\_RT\_Enable()
- Alta RTs can be controlled at the RT level – does not have to be global controlled. Better.
- ADT\_L1\_1553\_RT\_Start()

### Read & Write Data

- **USER APPLICATION CODE GOES HERE**
- ADT\_L1\_1553\_RT\_SA\_CDPWrite()
- ADT\_L1\_1553\_RT\_SA\_CDPRead()
- ADT\_L1\_1553\_RT\_MC\_CDPRead/Write()
- Multi Buffering of Mode Codes Available
- Alta Has Common Data Packets for All 1553 Functions – Better!

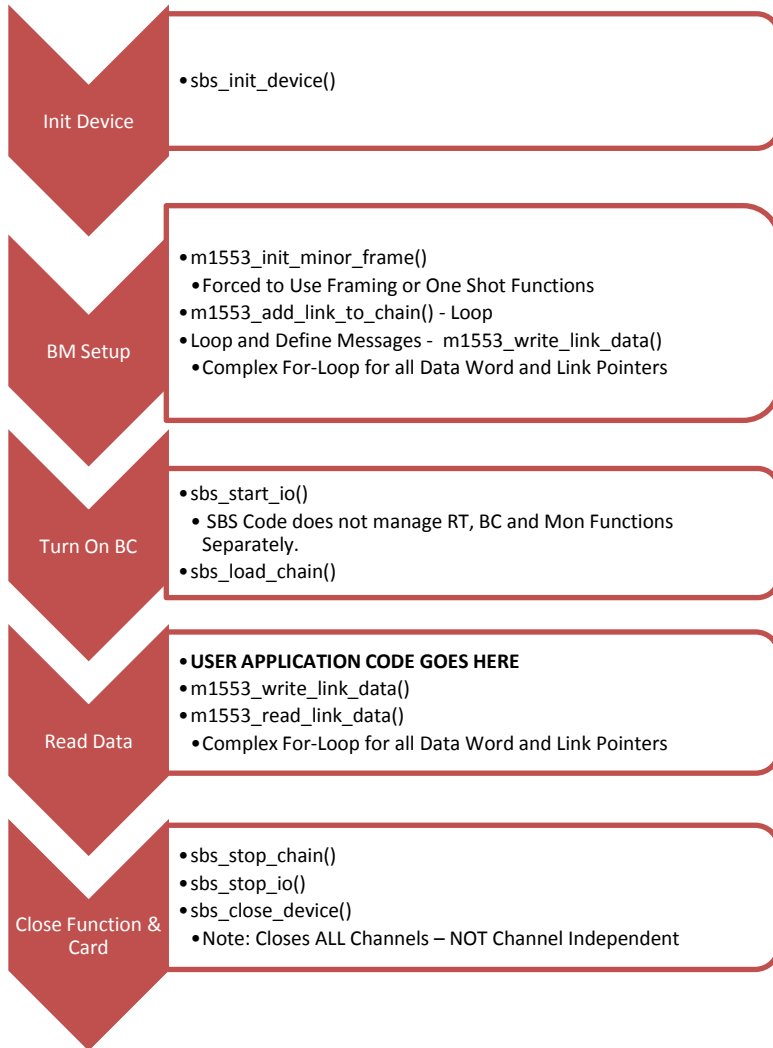
### Close Function & Device

- ADT\_L1\_1553\_RT\_Stop()
- ADT\_L1\_CloseDevice()
- Note: Closes on Channel Device. Better.

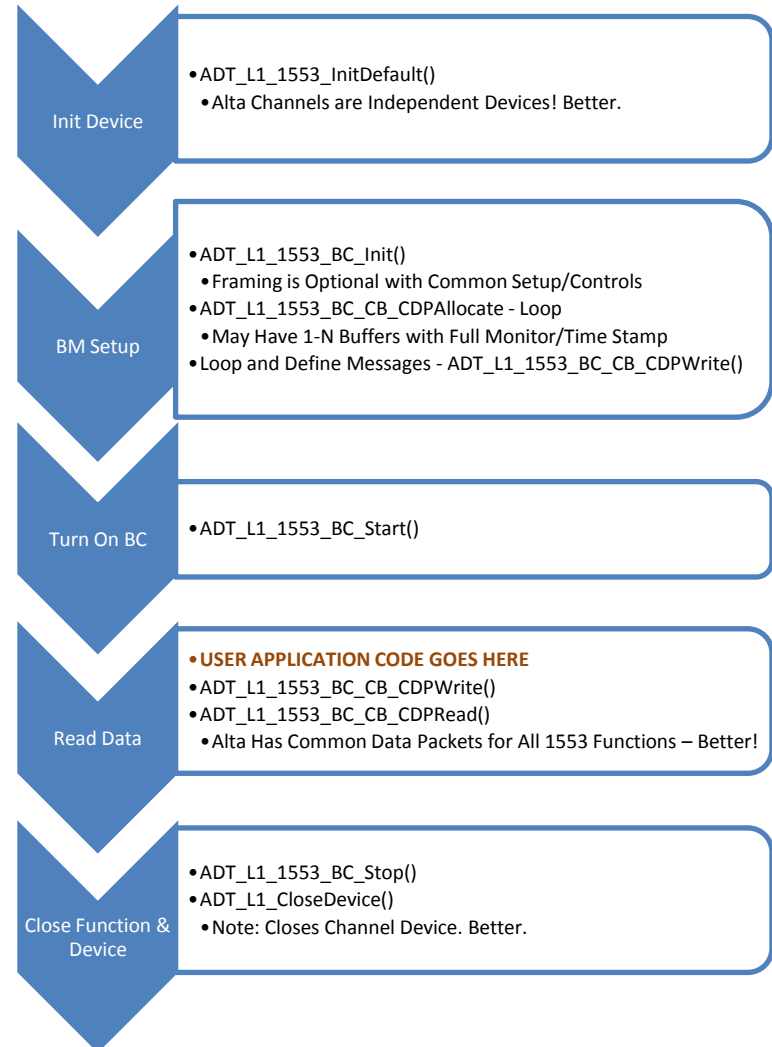
Alta Functions are Well Designed for Embedded and Test Applications

# Typical BC Applications

## SBS API Functions



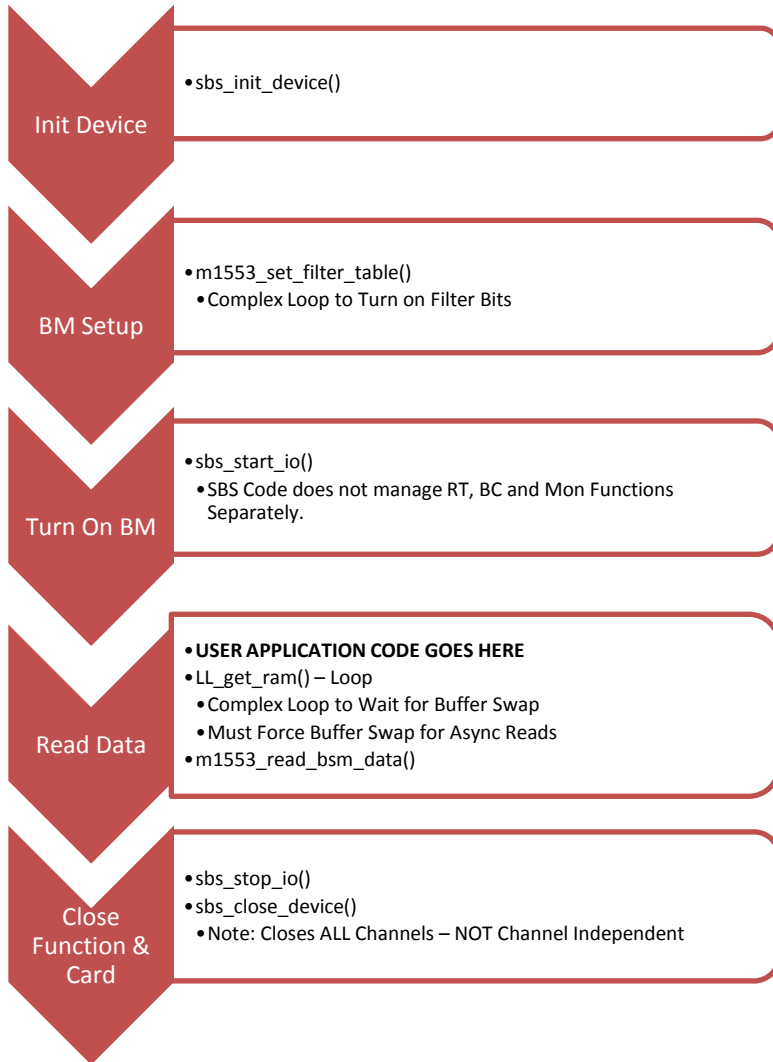
## Alta API Functions



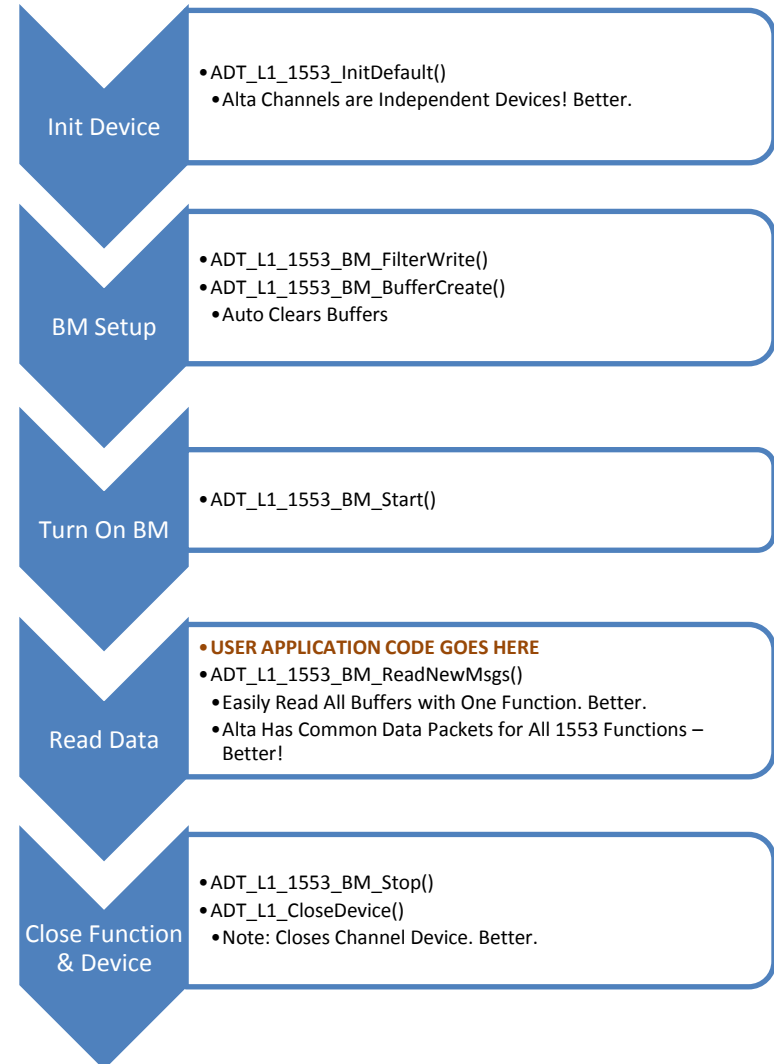
Alta Functions are Well Designed for Embedded and Test Applications

# Typical BM Applications

## SBS API Functions



## Alta API Functions



Alta Functions are Well Designed for Embedded and Test Applications

# Alta API Highlights

- **Alta API Provides Logical, Well Designed Functions. This Should Simplify Porting of Applications and Provide for Better Long Term Support.**
- **In Most Cases, Alta Requires Fewer Steps to Execute the Same Task. This will Simplify Code Logic and Management. Code Porting Time Should Only Be 1-2 Days for Most Tasks.**
- **Alta Provides Memory Management Functions. Memory Can be Allocated/Freed as Needed.**
  - SBS Does not Provide Advanced Memory Management
- **Alta Allows for Independent Channel Devices to Support Multi Applications**
  - SBS Treats ALL Channels and Boards as One Device, Which Can Greatly Complicate Multi Channel Applications
- **Alta's API is a Modular, Multi-Layer API That Can Easily Port to Various Operating Systems.**
  - SBS's API is not multi-layer – SBS's is old monolithic design with OS dependencies scattered through out code. Too Many "#IF DEFS" – Very Complicate Code.
- **Alta Provides both ANSI C Level Functions for standard Windows, Linux and RTOS Applications and "Managed" Assemblies for advanced Windows C++/C# Compatible Applications. This greatly reduces integration time for C#, LabVIEW and other advanced software tool sets.**