LAT Configuration

• LATC Universe
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LATC Universe

SSR

Ground | SIU | LAT Registers

Filesystem | LCB
LAT Register Classification

• Engineering/Development
  – LATp Command/Response statistics

• Application Driven
  – Command/Response masks, Power

• Monitoring
  – Voltages, Temperatures, Currents, Counters

• Write Once
  – Timeouts

• Configuration
  – TFE Data Masks
LATC Register Hierarchy

- GEM
  - TAM
  - ROI
  - TIE
  - SCH
  - WIN
- TEM
  - TIC
  - CCC
  - TCC
  - SPT
    - CRC
    - TRC
    - TFE
- AEM
  - ARC
  - AFE
- CCC
- TCC
- SPT
- CRC
- TRC
- TFE
- CFE
Sample LATC XML

<?xml version='1.0' standalone='yes' ?>
<!DOCTYPE LATC_XML SYSTEM
    "//afs/slac/g/glast/flight/ICS/source/LATC/prod/LATC/latc.dtd">

<LATC_XML>

<AEM>

<trigger_sequence>
    <cal_strobe> 0 </cal_strobe>
    <tack> 0 </tack>
</trigger_sequence>

<aem_configuration>
    <data_mask>0x3ff</data_mask>
</aem_configuration>

<ARC ID = 'BCAST'>
    <pha_enable_0> 0xffff </pha_enable_0>
    <pha_enable_1> 0x3 </pha_enable_1>
    <veto_enable_0> 0xffff </veto_enable_0>
    <veto_enable_1> 0x3 </veto_enable_1>
    <max_pha> 18 </max_pha>
</ARC>

</AEM>

</LATC_XML>
Sample LATC XML (cont.)

```xml
<?xml version='1.0' standalone='yes' ?>
<!DOCTYPE LATC_XML SYSTEM
   "//afs/slac/g/glast/flight/ICS/source/LATC/prod/LATC/latc.dtd">
<LATC_XML>
  <AEM>
    <ARC ID = 'BCAST'>
      <AFE ID = 'BCAST'>
        <afe_configuration>
          <high_TCI> 0 </high_TCI>
          <HLD_discriminator> 1 </HLD_discriminator>
          <veto_discriminator> 1 </veto_discriminator>
          <high_gain_range> 0 </high_gain_range>
          <manual_gain_range> 0 </manual_gain_range>
          <TCI> 1 </TCI>
        </afe_configuration>
      </AFE>
    </ARC>
  </AEM>
</LATC_XML>
```
Operation (in words)

- Set of XML files describing desired configuration are prepared by ISOC.
- LATC XML parser converts these into binary LATC configuration files.
- FMX tool is used to select subset of all binary configuration files in the database and create a Master File.
- All binary files not present on the LAT plus Master File are uploaded in the usual manner.
Operation (in words) (cont.)

- Master File is identified in argument to a command to calibrate or acquire data.
- LATC is used to read the binary files into the cache and configure the LAT.
- LATC is used to interrogate the LAT and capture the configuration.
- The captured configuration and the cached configuration can be compared on the LAT.
- The captured configuration is written to the SSR.
Operation (in words) (finale)

- The captured configuration is recovered from the downlinked data.
- LATC API is used to pull out interesting values.