HRS Interoperability Working Group Update
9-Jul-2019
Steps for Completion of version 1.1

1. Establish what will be in 1.1 and agree on clinical content with HRS Interoperability workgroup (Technical and HRS groups)
   ▪ Complete
2. Define all technical details for all parameters (Technical)
   ▪ See follow slides
3. Work with IHE, IEEE, and NIST to update standards/tooling (Technical); publish IHE updates, draft IEEE nomenclature
   ▪ Discussions ongoing with NIST, IHE
4. Complete Connectathon (Technical)
   ▪ Goal: January 2021
5. Publish any necessary updates due to Connectathon
6. Balloting for IEEE nomenclature approval
IDC Nomenclature (ISO/IEEE 11073-10103) development status based on the parameter survey from 2012 with HRS clinicians

- Recent device programming date/time and/or program counter
- Mean ventricular heart rate at atrial burden
- Lead/Device recall information
- Multisite Left Ventricular Pacing parameters
- Counters for shocks started/successful and ATPs successful
- Number and energy of shocks applied per episode (machine readable)
- Number of ATPs applied per episode (machine readable)
- Message triggers / alert summary (urgency) => Notifications
- RV pacing avoidance algorithm name and status
- Message trigger categories
- MRI parameters
- Patient Pacemaker Dependant? (YES/NO)
- Message triggers / alert summary (compact)
- Shock waveform parameters
- PVARP
- Patient activity
- Message triggers / alert summary (long)
- RA/RV/LV sensing configuration
- More vendor specific entries in lists of episode types, brady modes
- Thoracic impedance

- All definition done
- Definition nearly done
- not done yet
- Not in 1.1
IDC Nomenclature (ISO/IEEE 11073-10103) 
development status based on the parameter survey from 2012 with HRS clinicians

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Importance 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean A/V heart rate at rest/night</td>
<td>✓</td>
</tr>
<tr>
<td>AF Suppression algorithm info (ON/OFF)</td>
<td>✓</td>
</tr>
<tr>
<td>PVARP after PVC/PAC</td>
<td>✓</td>
</tr>
<tr>
<td>PVAB / Far-field protection window after Pace</td>
<td>✓</td>
</tr>
<tr>
<td>PVAB / Far-field protection window after Sense</td>
<td>✓</td>
</tr>
<tr>
<td>Patient comments if stored in device / system (medication, indication, ...)</td>
<td>✓</td>
</tr>
<tr>
<td>Date of the next scheduled in clinic / remote follow-up(s)</td>
<td>✓</td>
</tr>
<tr>
<td>Rate adaptation settings (for brady pacing)</td>
<td>✓</td>
</tr>
<tr>
<td>LVPP / TWPP (ON/OFF)</td>
<td>✓</td>
</tr>
<tr>
<td>Post shock pacing settings (brady mode, basic rate, ...)</td>
<td>✓</td>
</tr>
<tr>
<td>RVB</td>
<td>✓</td>
</tr>
<tr>
<td>LVB</td>
<td>✓</td>
</tr>
<tr>
<td>RARP (ARP)</td>
<td>✓</td>
</tr>
<tr>
<td>RABP</td>
<td>✓</td>
</tr>
<tr>
<td>RVRP (VRP)</td>
<td>✓</td>
</tr>
<tr>
<td>LVRP</td>
<td>✓</td>
</tr>
<tr>
<td>Rate adaptation sensor type (coded and machine readable)</td>
<td>✓</td>
</tr>
<tr>
<td>IVRP</td>
<td>✓</td>
</tr>
<tr>
<td>LVPP / TWPP</td>
<td>✓</td>
</tr>
<tr>
<td>Respiratory Rate</td>
<td>✓</td>
</tr>
<tr>
<td>Heart Rate Variability (HRV)</td>
<td>✓</td>
</tr>
</tbody>
</table>

Machine readable EGMs ✓
EGMs via PDF ✓ already available since V1.0
IDC Nomenclature (ISO/IEEE 11073-10103)  
Additional content identified after the survey 2012

Nomenclature versioning ❌
DFT test parameters ❌
Heart rates for AV-delay ranges ❌
Universal Device Identifier (UDI) ❌
Trend data 24h ❌
Trend data last weeks/months ❌

New Device Types
Parameters related to subcutaneous ICD ❌
Parameters related to leadless pacemakers ❌

LOW Importance 2016 HIGH

Diagram: Rating Dr. Rosier

- ✓ All definition done
- ✓ Definition nearly done
- ✗ not done yet
- ✓ Not in 1.1