



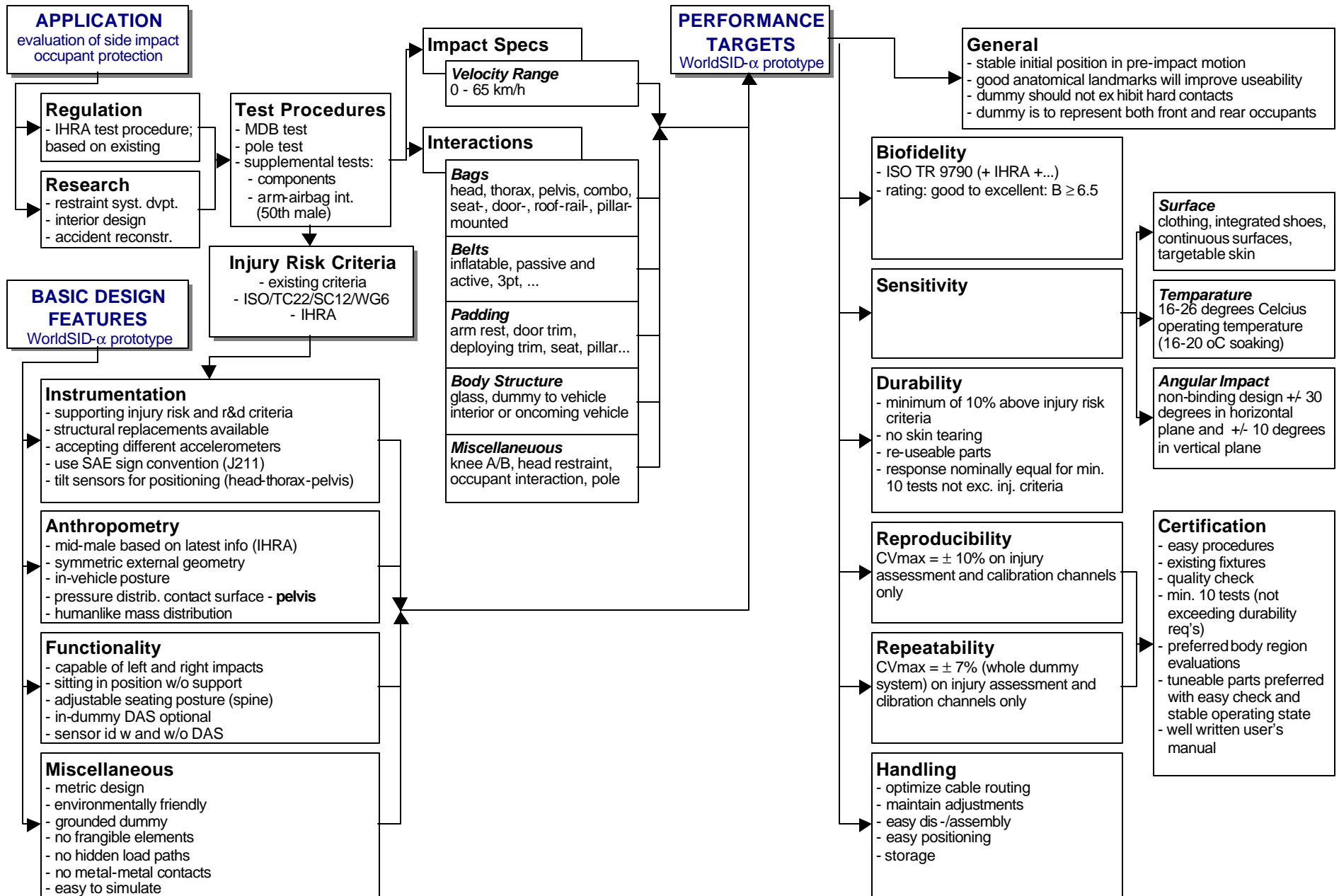
## WORLD SID DESIGN BASELINE

**FINAL VERSION**  
**SEPTEMBER 20-21, 1999**

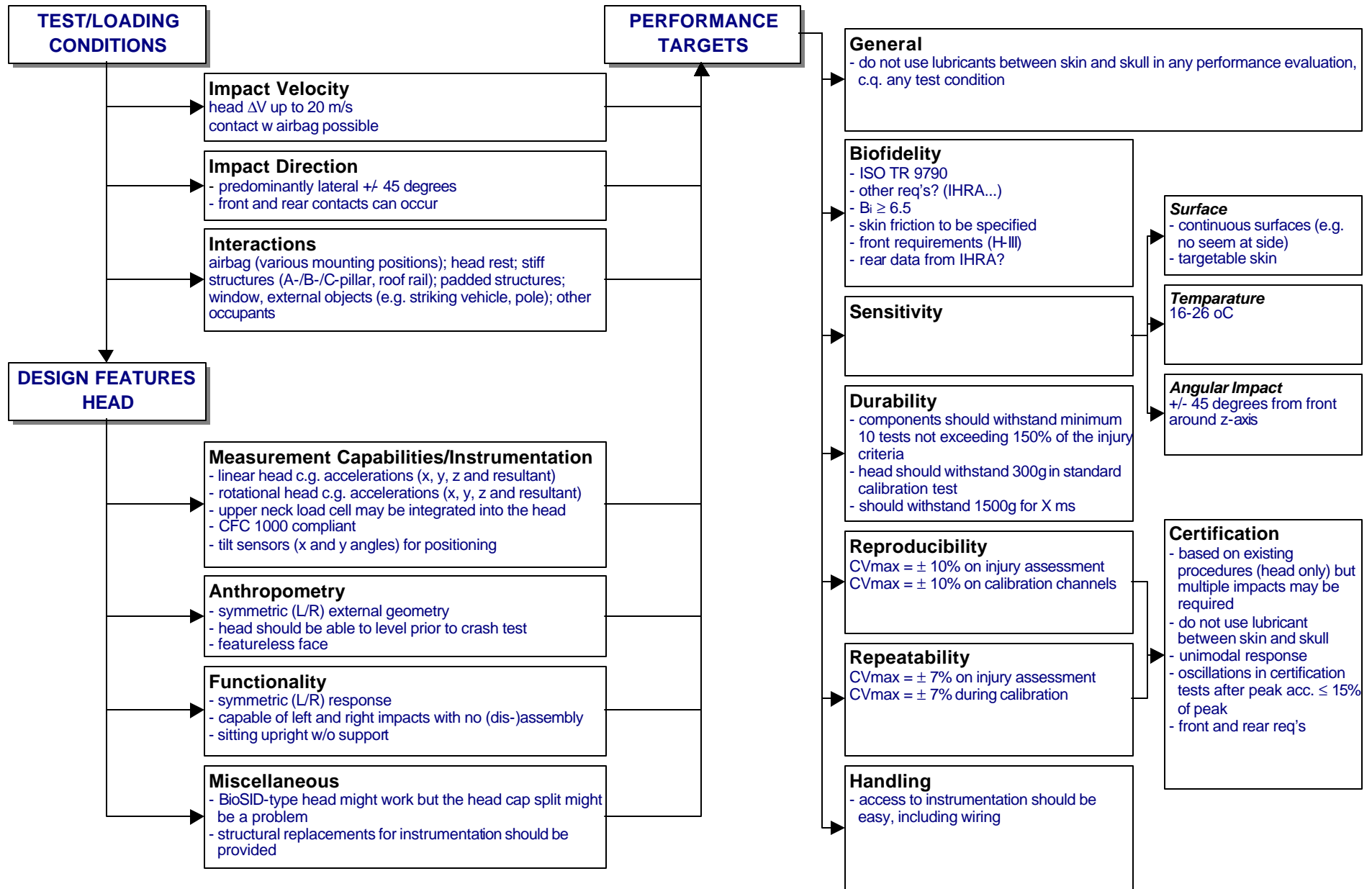
### INTRODUCTION

At the 9<sup>th</sup> WorldSID Task Group meeting in Frankfurt, Germany, final modifications were made to this design baseline. The WorldSID Design Team will use this document to prepare an extensive design brief, detailing all aspects of the WorldSID- $\alpha$ , the first prototype WorldSID.

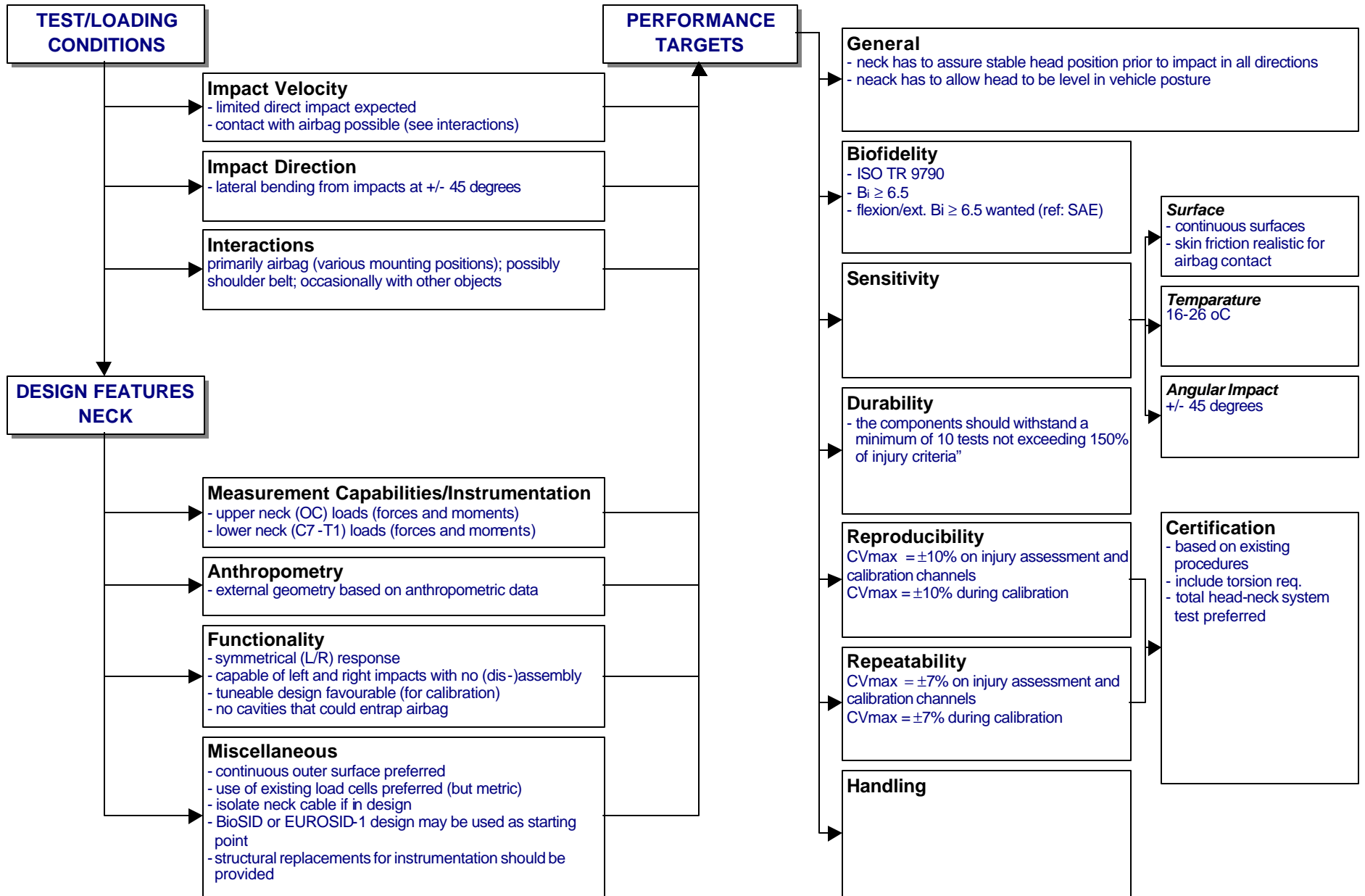
# 1. WorldSID GENERAL SPECIFICATIONS – FULL DUMMY



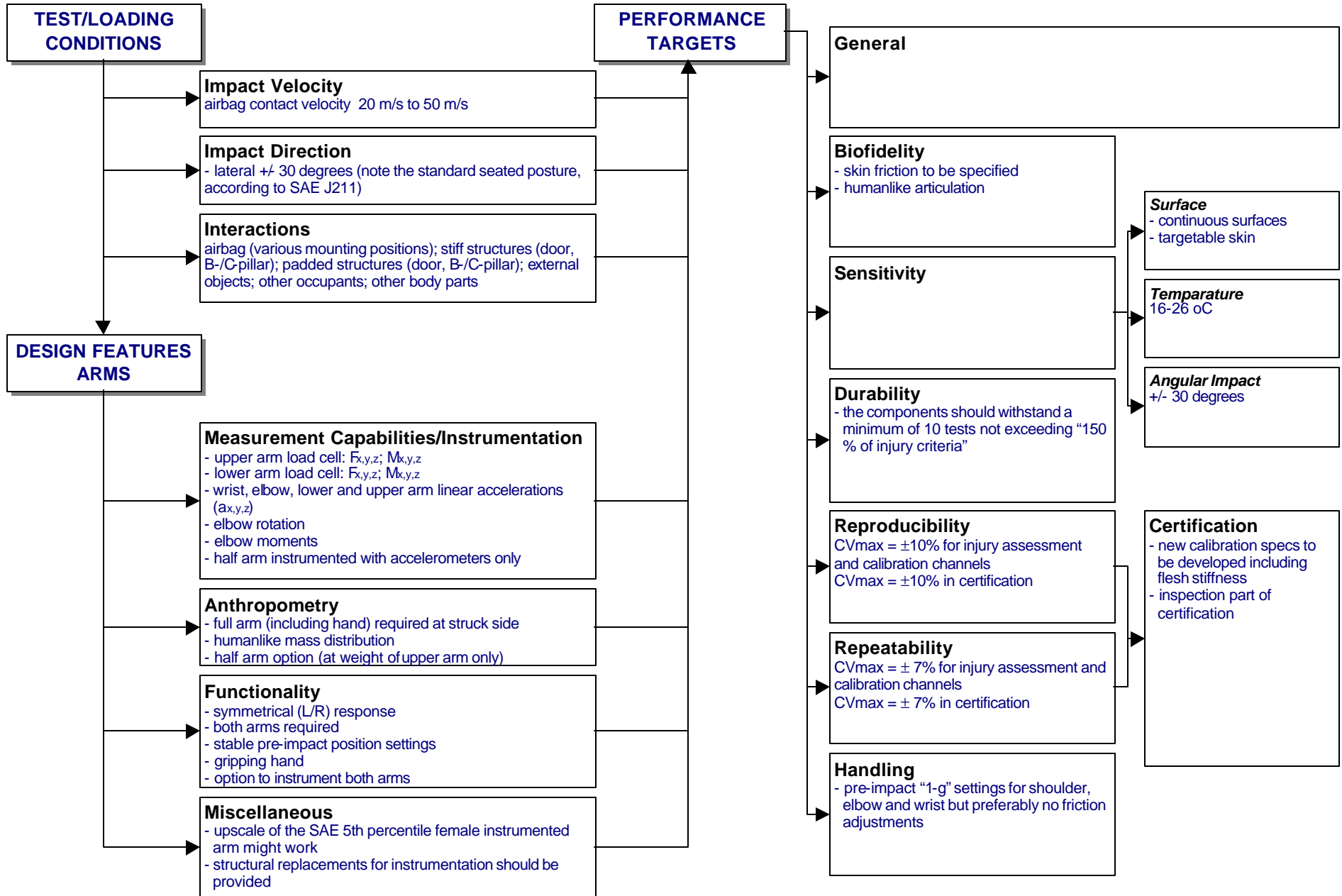
## 2. WorldSID SPECIFICATIONS – HEAD



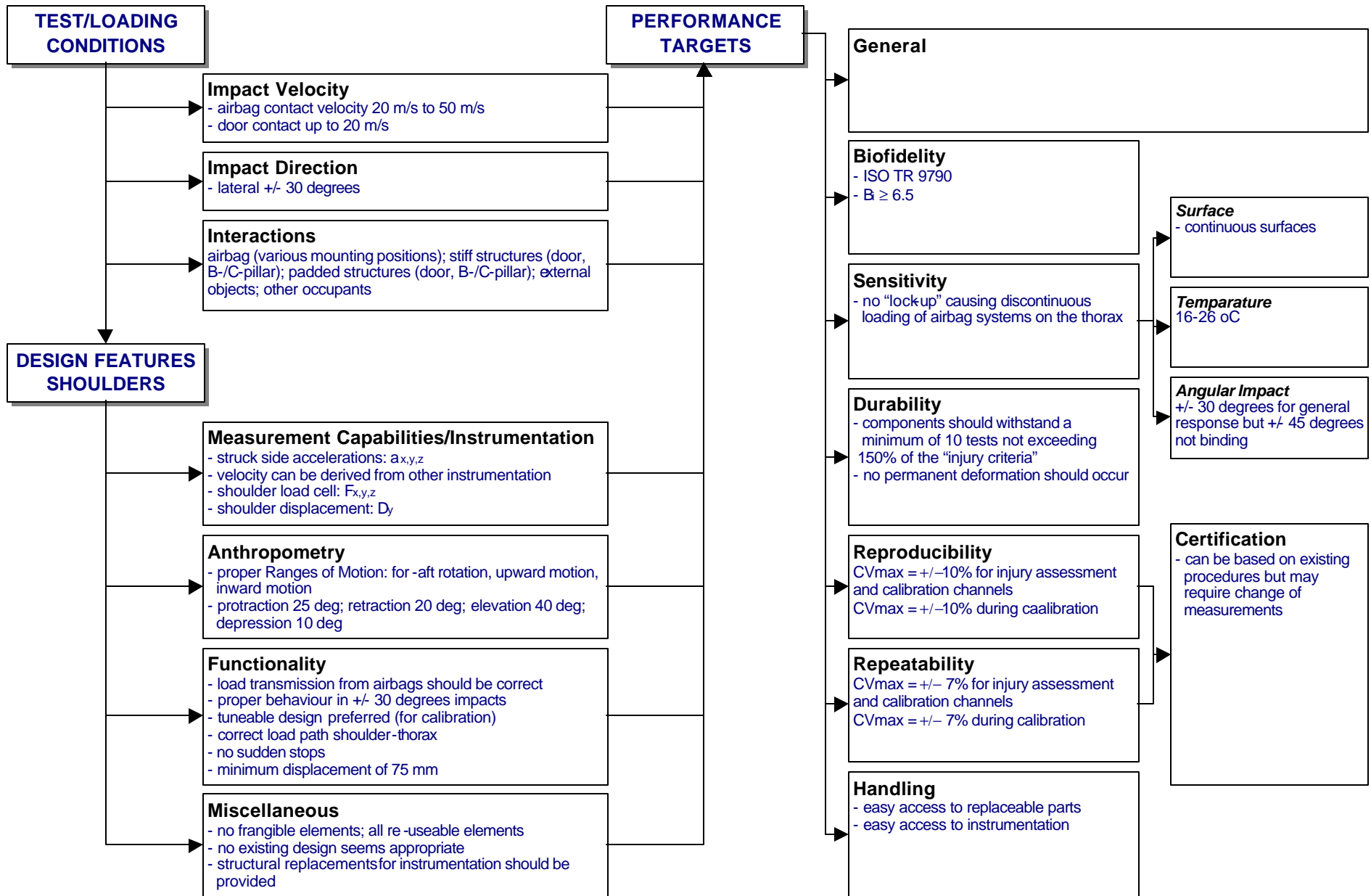
### 3. WorldSID SPECIFICATIONS – NECK



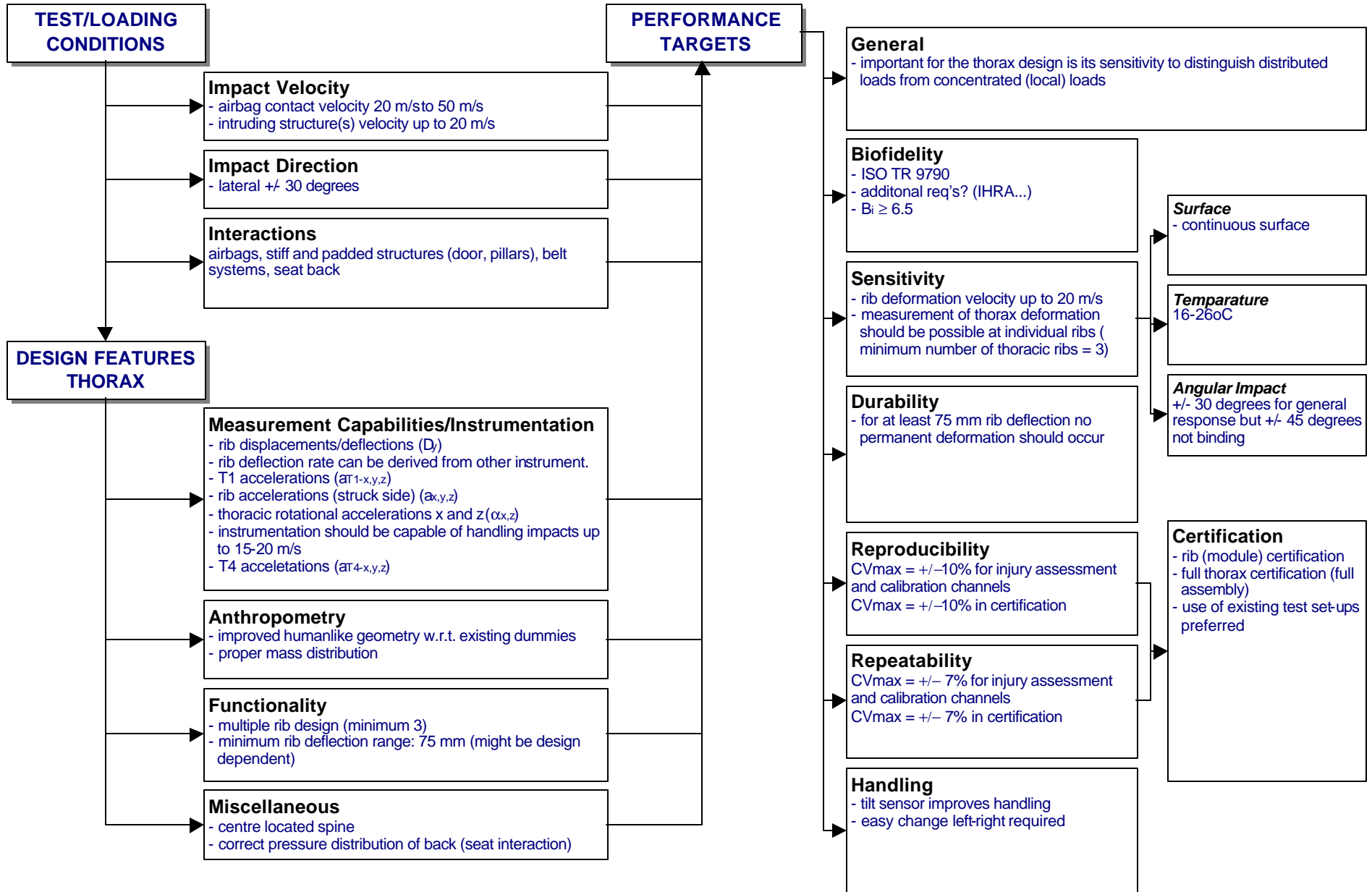
4. WorldSID SPECIFICATIONS – ARMS



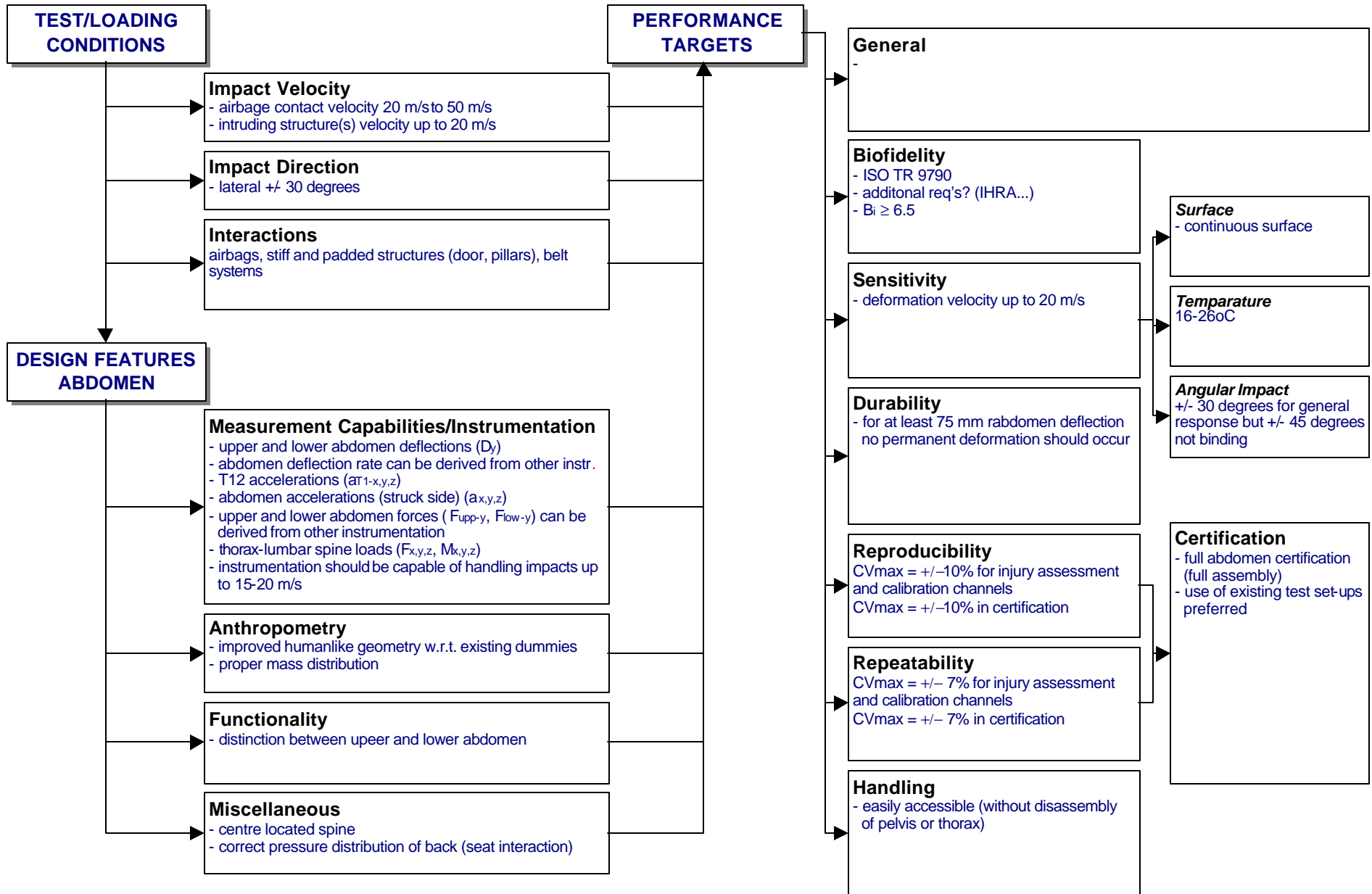
5. WorldSID SPECIFICATIONS – SHOULDERS



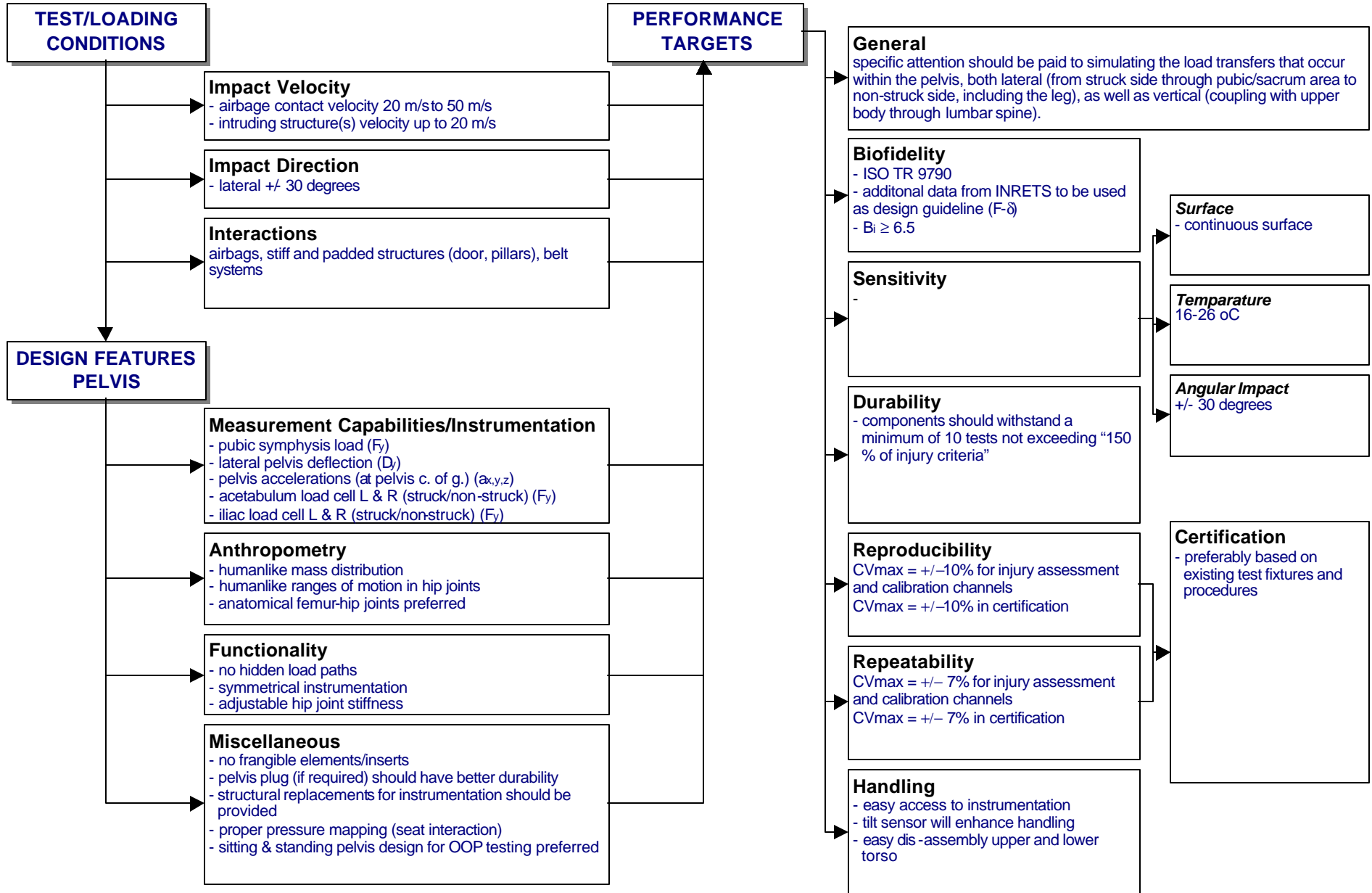
6. WorldSID SPECIFICATIONS – THORAX



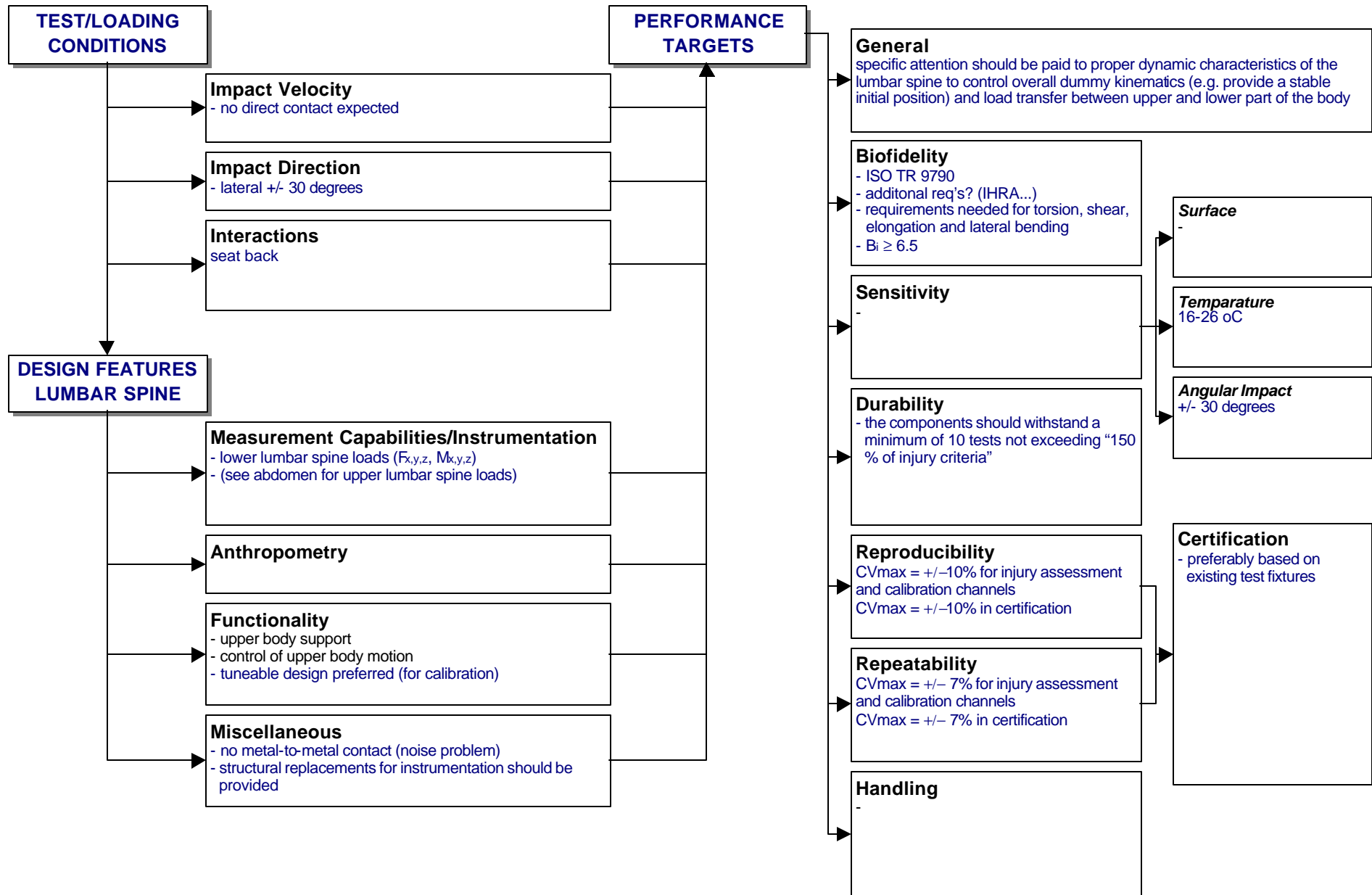
7. WorldSID SPECIFICATIONS – ABDOMEN



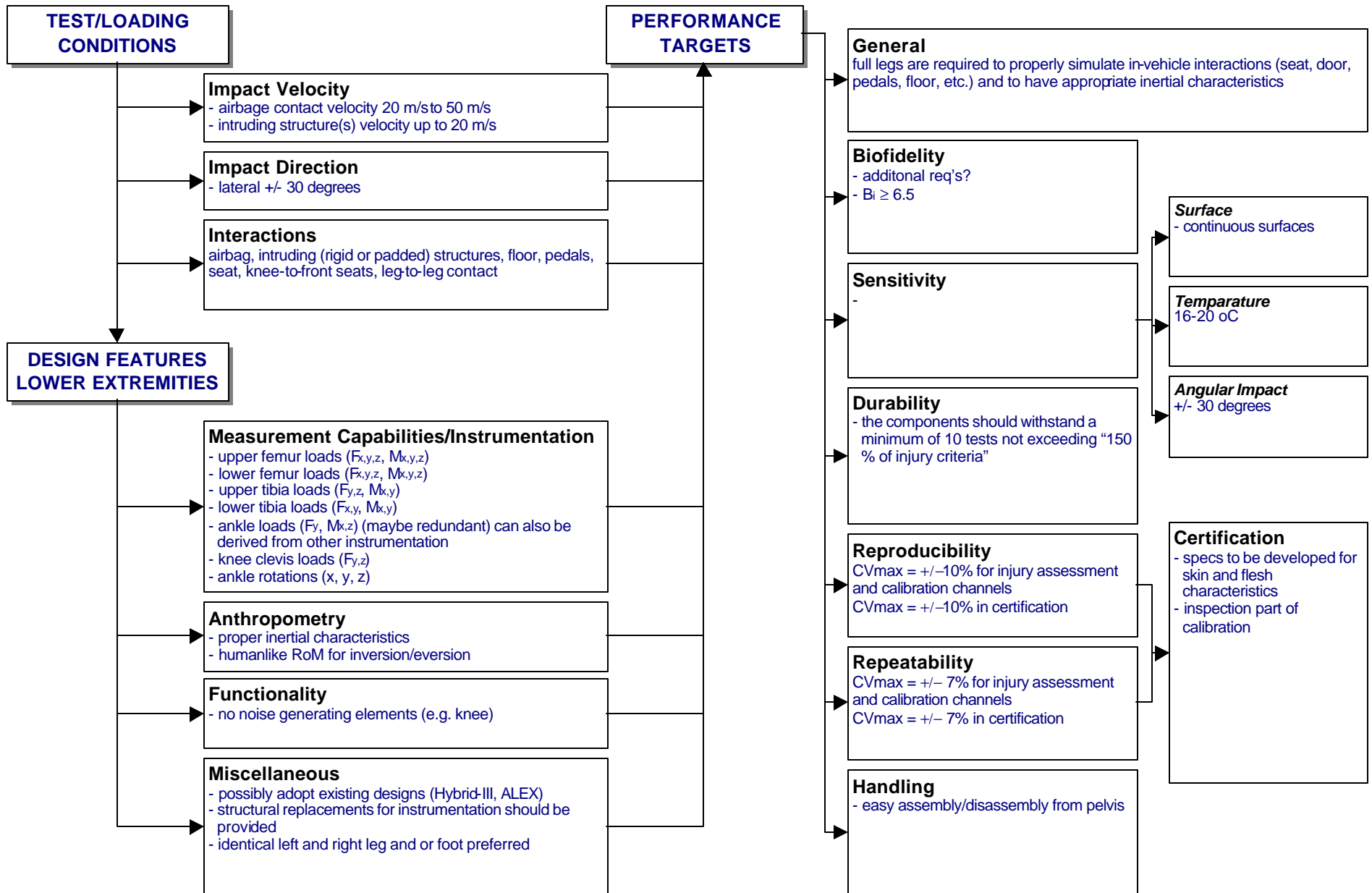
8. WorldSID SPECIFICATIONS – PELVIS



9. WorldSID SPECIFICATIONS - LUMBAR SPINE



10. WorldSID SPECIFICATIONS – LOWER EXTREMITIES



**WorldSID SPECIFICATIONS – ADDITIONAL ITEMS****ADDITIONAL ITEMS**

- **Anthropometry:** Where possible and practical, establishing the anthropometry specifications will follow the recommendations by the IHRA-Biomechanics Working Group. As of this date, uncertainty still exists over the anthropometry database(s) to use to specify the mid-size male subject. IHRA, in its meeting in May, 1999, has preliminarily recommended to use the “UMTRI database” as this is the most comprehensive database available for subjects in an automotive posture. Whereas the UMTRI database is based on North-American subjects, the stature, sitting height and weight of the mid-size male “world-subject” should be taken from other studies. IHRA proposed to derive this from a study by Jürgens et al. Anthropometry specifications will include both geometry (internal and external) as well as inertia (mass and mass distribution/moments of inertia).
- **Clothing:** Clothing will have to be specified as a dummy part and design and performance specifications need to be developed to ensure appropriate interaction with the seat (primarily). Whereas skin characteristics have been mentioned (but not quantified yet) for various body parts, this seems insufficient to ensure appropriate dummy-to-seat interaction. An alternative approach could be to specify (quantify) dummy-to-seat interaction and design a tight fitting jacket for the dummy, i.e. make the skin characterization redundant for some body parts. The design brief will further detail the design requirements for clothing.
- **In-Dummy Data Acquisition System:** The Task Group as well as the design team agree that the inclusion of an in-dummy data acquisition system (DAS) will be pursued. This will have a great effect on the design of the WorldSID- $\alpha$ .
- **Reference to SAE J826 H-Point Manikin:** Existing side impact dummies do not have their H-point in the same location as the SAE J826 H-point manikin. The origin of these differences is unclear and the H-point position needs to be clarified based on the anthropometry data.