

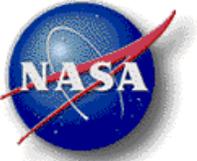
Battery Standards

The Need?

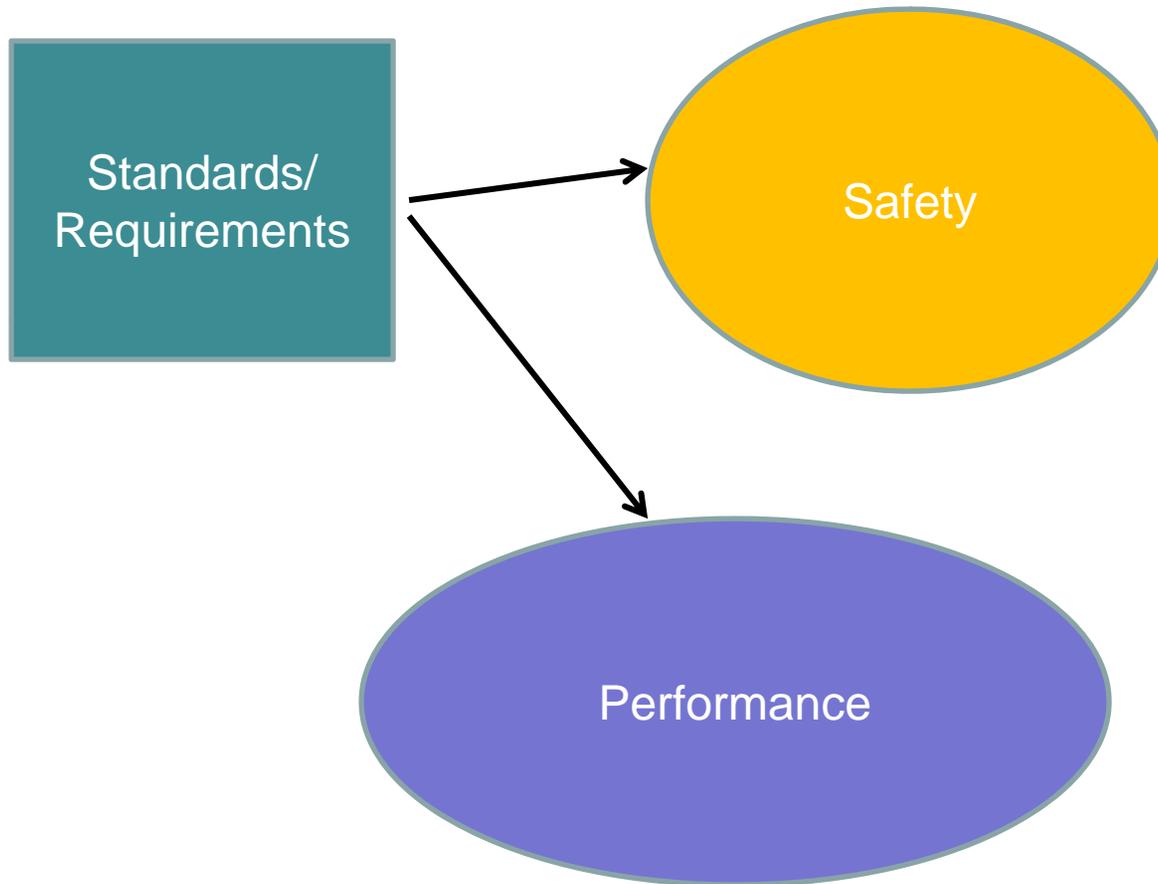
J. Jeevarajan, M. Martinez
NASA-JSC

Space Power Workshop
April, 2011

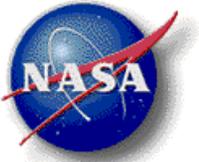
Judith Jeevarajan/NASA-JSC



Types of Standards



Judith Jeevarajan/NASA-JSC



Need for Battery Standards



Vendor needs to understand the minimum requirements for a mission / application (performance and safety)

Vendor needs to be able to plan a schedule and estimate cost based on a certain set of minimum requirements

Vendor needs clear pass/fail criteria to be able to show that their battery can meet performance and safety mission requirements

Vendor needs to know of any unique requirements to be able to choose the right battery chemistry and optimum design

Judith Jeevarajan/NASA-JSC



Issues due to Lack of Battery Standards



Do not have any requirements to meet



Misinterpretation of requirements - Margin of safety or performance for one team may not be the same for another?

No requirements for accountability/responsibility
-may be responsibility of owner to carry out delta work to meet actual requirements

Knowledge and Technical Expertise not used cost-effectively
Leads to Cost and Schedule impact

Judith Jeevarajan/NASA-JSC



Need for Multiple (Plethora of) Standards?



Underwriter's
Laboratory
(UL)

International
Electrotechnical
Commission/
American National
Standards Institute
(IEC/ANSI)

Navy

NASA

Society of Automobile
Engineers (SAE)

Air Force
(Range Safety)

Military Std.
(relevancy for
batteries
although not
specifically)

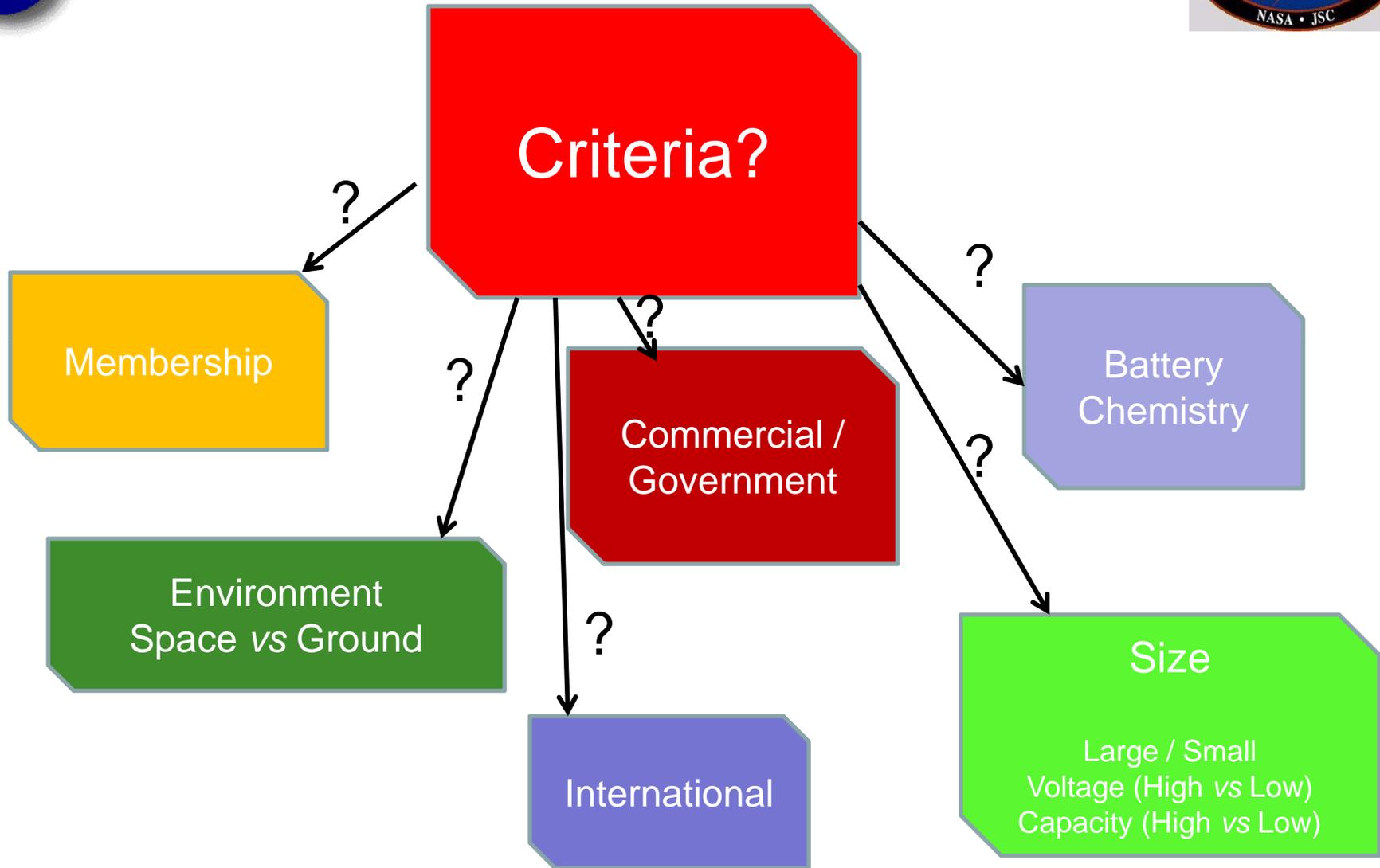
European
Standards

Battery
Association of
Japan (BAJ)

Judith Jeevarajan/NASA-JSC



Set of Common Standards?



Judith Jeevarajan/NASA-JSC



Open Discussion



Topics to be addressed:

1. Need
2. Participation/membership
3. Application/Unique environment

Judith Jeevarajan/NASA-JSC