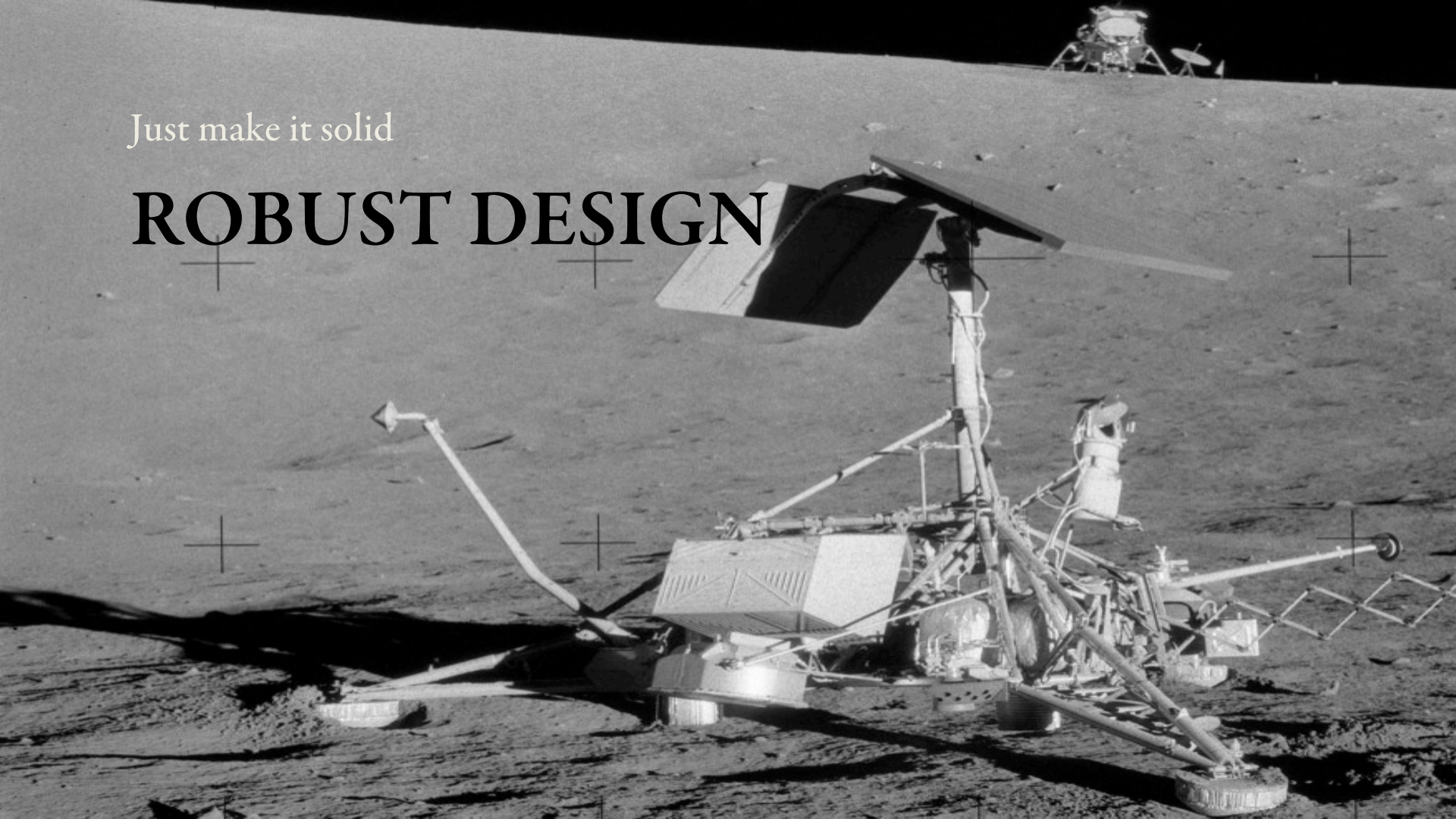
ASQ CRE Prep course

Lesson III. A. 7. l.

Design of Experiments

Robust Design



Just make it solid

ROBUST DESIGN

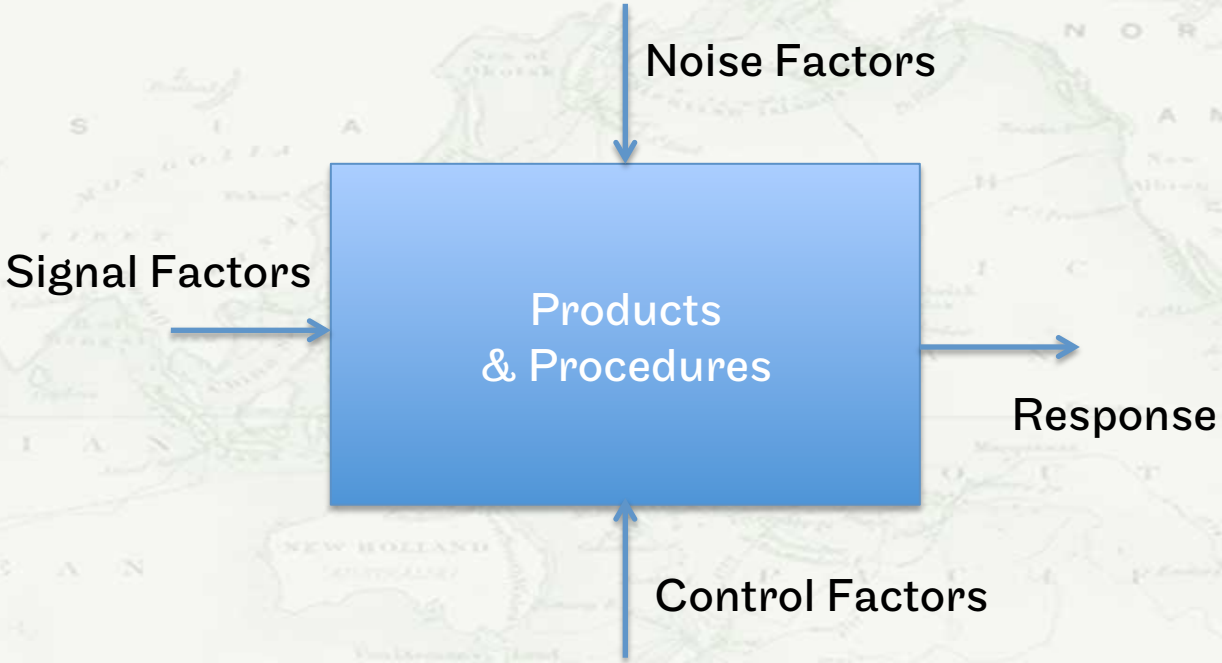
An Approach

Robustness for the evaluation and improvement of the product development process

Consistency

Control the few critical elements

Taguchi Robust Approach



Considerations

Concept

Parameter

Tolerance

Signal to Noise Ratio

Calculation to evaluate experiments

A larger signal to noise ratio is desirable

Loss Function

Used to determine the financial loss as quality characteristic, y, deviates from the target, m.

$$L(y) = k(y - m)^2$$

k is ratio of cost of a defective product divided by the tolerance squared

Tolerance Design

$$\text{Tolerance Specification} = \frac{\text{Functional Limit}}{\text{Economical Safety Factor}}$$

$$\Phi = \sqrt{\frac{\text{Loss when exceeding Functional Limit}}{\text{Loss when exceeding tolerance specs}}}$$

What is the difference between Robust and Reliability?

Work the Examples, too

Take another Sample Exam

Send over your questions

fms@accendoreliability.com

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Lesson III. A. 8.

Fault Tolerance