3.4 Calculation of technology appropriateness scores

The appropriateness score is calculated by checking how well the technology and the case functions match. The larger the overlap, the higher the score.
For a technology and a criterion c, the appropriateness score can be defined as

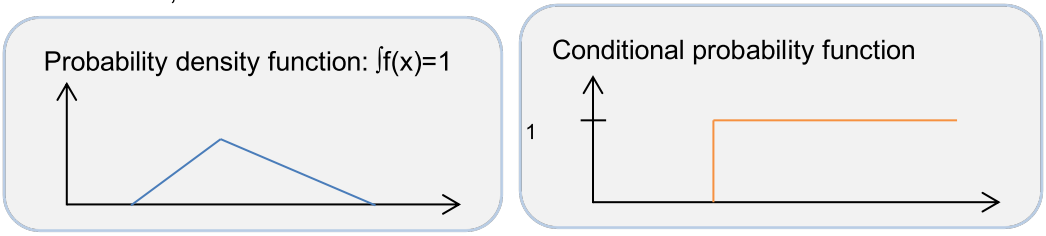
$$AS_{t,c} = P(p) = \int P(p|c)\, p(c)\, dc \qquad (2)$$

if p(c) is a probability density function, or

$$AS_{t,c} = P(p) = \sum_{c' \in \Omega} P(p|c)\, p(c') \qquad (3)$$

if p(c') is a probability distribution function.

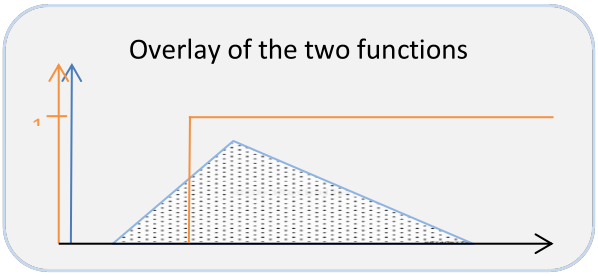
Example:
Two functions,



are overlaid and the appropriateness is the result of:

$$Attribute\ appropriateness\ score = \int density\ function \cdot performance\ function \qquad (4)$$

Visualizing it, the appropriateness score is calculated from the overlapping area under the two functions.



If a technology *t* has multiple criteria, the scores must be aggregated. The aggregation results in the technology appropriateness score (TAS), (Spuhler et al. 2018):

$$TAS_t = \sqrt[n]{\prod_{c=1}^{n} AS_{t,c}} \qquad (5)$$