

# DIN EN ISO 25119-2:2024-07 (E)

## Tractors and machinery for agriculture and forestry - Safety-related parts of control systems - Part 2: Concept phase (ISO 25119-2:2019)

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered</b> .....		<b>5</b>
Foreword .....		<b>11</b>
Introduction .....		<b>12</b>
<b>1</b>	<b>Scope</b> .....	<b>14</b>
<b>2</b>	<b>Normative references</b> .....	<b>15</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>15</b>
<b>4</b>	<b>Abbreviated terms</b> .....	<b>15</b>
<b>5</b>	<b>Concept — UoO</b> .....	<b>16</b>
5.1	Objectives .....	16
5.2	Prerequisites .....	16
5.3	Requirements .....	16
5.3.1	Basic requirements and ambient conditions .....	16
5.3.2	Limits of UoO and its interfaces with other UoO .....	17
5.3.3	Mapping and allocation of relevant functions to involved UoO, sources of stress .....	17
5.3.4	Additional determinations .....	17
5.4	Work products .....	17
<b>6</b>	<b>HARA — Determination of the AgPL<sub>r</sub></b> .....	<b>18</b>
6.1	Objectives .....	18
6.2	Prerequisites .....	18
6.3	Requirements .....	18
6.3.1	Procedures for preparing a HARA .....	18
6.3.2	Tasks in the HARA .....	18
6.3.3	Participants in HARA .....	18
6.3.4	Classification of a potential harm .....	18
6.3.5	Classification of exposure in the situation observed .....	19
6.3.6	Classification of a possible avoidance of harm .....	19
6.3.7	Selecting the AgPL <sub>r</sub> .....	20
6.4	Work products .....	22
<b>7</b>	<b>Functional safety concept</b> .....	<b>22</b>
7.1	Objectives .....	22
7.2	Prerequisites .....	22
7.3	Requirements .....	22
7.3.1	Safety goals .....	22
7.3.2	Functional safety requirements .....	22
7.3.3	Value of MTTF <sub>D</sub> .....	23
7.3.4	Value of DC .....	23
7.3.5	Selection of categories, MTTF <sub>DC</sub> , DC and SRL .....	23
7.3.6	Achieving the AgPL <sub>r</sub> .....	24
7.3.7	Compatibility with other functional safety standards .....	25
7.3.8	Joining E/E/PES .....	25
7.3.9	Alternate combinations of SRP/CS to achieve overall AgPL .....	25
7.4	Work products .....	25

<b>Annex A</b> (normative) <b>Designated architectures for SRP/CS</b> .....	<b>26</b>
<b>Annex B</b> (informative) <b>Simplified method to estimate channel <math>MTTF_{DC}</math></b> .....	<b>33</b>
<b>Annex C</b> (informative) <b>Determination of diagnostic coverage (DC)</b> .....	<b>37</b>
<b>Annex D</b> (informative) <b>Estimates for common-cause failure (CCF)</b> .....	<b>42</b>
<b>Annex E</b> (informative) <b>Systematic failure</b> .....	<b>44</b>
<b>Annex F</b> (informative) <b>Characteristics of safety-related functions that are often fundamental to risk reduction</b> .....	<b>47</b>
<b>Annex G</b> (informative) <b>Example of a risk analysis</b> .....	<b>50</b>
<b>Annex H</b> (normative) <b>Compatibility with other functional safety standards</b> .....	<b>55</b>
<b>Annex I</b> (informative) <b>Joined systems alternative compliance method</b> .....	<b>57</b>
<b>Annex J</b> (normative) <b>Alternate combinations of SRP/CS to achieve overall AgPL</b> .....	<b>58</b>
<b>Bibliography</b> .....	<b>60</b>