

ISO 18497:2018 (E)

Agricultural machinery and tractors — Safety of highly automated agricultural machines — Principles for design

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Safety requirements and protective or risk reduction measures
4.1	General
4.2	Principles for protection
4.3	Machine enabling operations
4.3.1	General requirements
4.3.2	Labelling and identification
4.3.3	Functional requirements
4.4	Operational procedures
4.4.1	General requirements
4.4.2	Automated engine control
4.4.2.1	General
4.4.2.2	Automated engine start
4.4.2.2.1	General
4.4.2.2.2	Hazard checks
4.4.2.3	Engine running
4.4.2.3.1	General
4.4.2.3.2	Hazard check
4.4.2.4	Engine stop
4.4.2.5	Engine stall
4.4.2.6	Engine fault
4.4.2.7	Engine status
4.4.2.8	Loss of communication
4.4.3	Automated motion control
4.4.3.1	General
4.4.3.2	General wheel motion initiation
4.4.3.2.1	General
4.4.3.2.2	Hazard check
4.4.3.3	General machine motion initiation
4.4.3.3.1	General
4.4.3.3.2	Hazard check
4.4.3.4	Motion stopping
4.4.3.4.1	General
4.4.3.4.2	Hazard check
4.4.3.5	Motion stop
4.4.3.6	Impaired motion
4.4.3.7	Motion fault
4.4.3.8	Machine motion status
4.4.3.9	Loss of communication
4.5	Machine operational status
4.6	Overriding of highly automated operation
4.7	Remote stopping of highly automated operation
4.8	Pendant control
4.9	Operational speeds of the machine

- 4.10 **Communication system**
- 4.11 **Perception system**
- 4.11.1 **General**
- 4.11.2 **Possible risk and failure modes**
- 4.11.3 **Fault management**
- 4.11.3.1 **General**
- 4.11.3.2 **Behaviour of the obstacle detection system in a fault condition**
- 4.11.3.3 **Behaviour of the perception system in a no-fault condition**
- 4.12 **Safeguarding system**
- 4.13 **Visual and audible alarms**
- 4.13.1 **Visual alarm**
- 4.13.2 **Audible alarm**
- 5 **Verification and validation of the safety requirements and protective or risk reduction measures**
- 5.1 **General**
- 5.2 **Verification methods**
- 5.3 **Test object specification**
- 5.4 **Verification of minimum performance of the systems perception and safety**
- 6 **Information for use**
- Annex A (informative) List of significant hazards**

Page count: 18