SYSTEM REQUIREMENTS

Priority level	Requirement		
Required	The telemonitoring system enables mobile home monitoring of the electrocardiogram		
	The telemonitoring system is certified as medical device for use in the intended medical application		
	The telemonitoring system meets national safety criteria		
	The telemonitoring system is validated for its functionality in the intended medical application		
	The telemonitoring system does not conflict the patients privacy		
Desired	The telemonitoring system is functionally similar to/better than monolead telemetry		
	The daily costs of monitoring using the telemonitoring system are lower than the daily costs of hospital admittance		
	The telemonitoring system is robust		
	The telemonitoring system is easy to use for the elderly patient		
	. The telemonitoring system is easy to use for the nurse and doctor		
	. The telemonitoring system enables simultaneous monitoring of multiple patients		
	. The telemonitoring system can provide feedback regarding its functionality		
	. The telemonitoring system enables mobile home monitoring of other parameters for		
	detection of other clinically relevant events		

Supplementary Table 1. General requirements of Telemonitoring system

Supplementary Table 2. Requirements of individual components of telemonitoring system

System	Priority	Requirement
component	level	
Sensor	Required	1. The ECG sensor system measures continuous single- or multiple leads ECG
system	_	1.1. The sensor provides sufficient signal quality during daily life activities
		1.2. The ECG sensor system provides at least a bipolar configuration
		1.3. The ECG signal range is at least +- 5 mV.
		1.4. The sample frequency is at least 100 Hz
		1.5. The operational temperature is 15-40°C
		1.6. The sensor is accurate (sensitivity of max $\pm 500 \ \mu V$)
		1.7. The sensor is suitable for adult man and women of different posture and
		age
		2. The ECG sensor system is suitable for mobile monitoring
		2.1. The sensor system is light weight ($<0.2 \text{ kg}$)
		2.2. The sensor system is portable and worn on the body surface or clothes
		2.3. Battery capacity or power supply allows an uninterrupted recording of at
		least 24 hours
		3. The ECG sensor system is safe
		3.1. The sensor system is certified as a medical device, according to national guidelines
		3.2. The sensor system is compatible with internal pacemakers
		3.3. The sensor system is compatible with defibrillators
		3.4. The sensor system does not leads to physical injury
		3.5. The sensor system does not affect the functionality of medical equipment
		surrounding the hospital bed
		4. The ECG sensor system is hygienic
		4.1. The sensor system can be cleaned or is disposable
	Desired	5. The ECG sensor system is easy to use for the patient
		5.1. Attaching the sensor is easy
		5.2. Removing the sensor is easy
		6. The ECG sensor system is comfortable
		6.1. The sensor system is non-invasive
		6.2. The sensor system brings minimal pain, itchiness or stress

6.4. The sensor system does minimally limit the patients movement 7. The ECG sensor system is robust and durable 7.1. The sensor system is water or splash proof 7.2. The sensor system indicates the quality of recordings 8. The ECG sensor system indicates the quality of recordings 9. The ECG sensor system registers activity level and type 10. The sensor system registers activity level and type 11. The ECG sensor system registers activity level and type 12. The sensor system registers activity level and type 13. The sensor system registers activity level and type 14. The sensor system registers activity level and type 15. The sensor system provides a digital application for the patient for symptom registration 16. ECG abnormalities' automatically detected 19. The signal is filtered and preprocessed Data transferre 20. Data is transferred with a wireless connection from any remote locations the hospital region 21. Data can be transferred continuously (maximum transfer intervals of 30 s)? 22. The maximum delay of data transfer (in case of emergencies) is 10 s 23. The data is buffered or saved for at least 4 hin case data transfer fails 24. Data transfer automatically 25. Data is encrypted according to national privacy regulations 26. Direct data trans		1	
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ECG: Electrocardiogram. 1: ECG abnormalities include asystole, ventricular fibrillation, ventricular tachycardia, tachycardia, bradycardia (adjustable threshold), abrupt or gradual change in heart rate, ventricular pause, irregular heart rate, missed beats, and premature complexes. 2: An acceptable alternative for continuous monitoring includes decentralized assessment with direct and continuous data transfer in case of ECG abnormalities or in case of patient or nurs