- System test scenarios

SCENARIO	Expected OUTPUT	Pass/ Fail	Comments	Tested By
River level is worth sending	See measurement received and displayed on front-end graph for specific device	Pass		Natalie Daniel Dharius
River level is not worth sending	See other measurements received displayed on graph with a gap for the time period where this measurement was ignored	Pass	This means that the last measurement received is assumed to be the current river level.	Natalie Daniel Dharius
River level is not worth sending after 24 periods (ignored 24 times)	“Still Here” message received in database for this sensor	Pass		Natalie Daniel Dharius
River level is below ignore threshold	No measurements are displayed until river level goes above ignore threshold	Pass		Natalie Daniel Dharius
River level is above Accelerated Readings (AR) Mode threshold	Measurements are received at a faster sampling rate and displayed on the graph until River level falls back below threshold	Pass		Natalie Daniel Dharius
Device loses connection to gateway	Measurements are not received but logged on device SD card	Pass		Natalie Daniel Dharius
Device loses power (Engineer replaces battery)	Device ignores setup and continues normal operation using knowledge of previously configured settings	Pass	Due to settings being stored in on-device flash memory	Natalie Daniel Dharius

Device hits maximum daily upload limit for TTN	Measurements are not received	Pass	Would be best to handle this situation better (e.g. hold spread factor value for each device in DB meta data to calculate if upload limit has been reached)	Natalie Daniel Dharius

- Follows full integration tests for this one, specific scenario.
    - A full run through of our system connecting to TTN, sending data, storing data into our database and retrieving and displaying the data in our API.

SCENARIO	Expected OUTPUT	Pass/ Fail	Comments	Tested By
LoRaWan connection to The Things Network	A “join” message is recorded	Pass		Daniel
Data transmission to The Things Network	A reading is recorded	Pass		Daniel
Node.js receiving uplink	A “Received uplink” message is printed to the terminal	Pass		Daniel
Node.js storing uplink data into InfluxDB	A “saved data to influx” message is printed to the terminal. Data can be queried in InfluxDB terminal	Pass		Daniel
API endpoints fetching data e.g. “reading/monthly”	Data is returned from the database, grouped by months	Pass		Daniel
API front-end components	Graphs load immediately when	Pass		Natalie

loading	loading the webpage			
API front-end reflecting API endpoint data	The graphs reflect the data fetched from the endpoints	Pass		Natalie
Leave fully setup device to send river measurements periodically over the course of a few hours	Measurements are displayed on front end graph with 30 minute intervals (leaving gaps where no river level change has occurred)	Pass		Natalie Daniel Dharius