

◀ Crossrail update: schedule

Mayoral meeting

26 July 2018

1. Current status
2. Schedule priorities
3. Programme options
 - Schedule deep-dive results
 - SQRA analysis and conclusions
 - Options for partial opening in December
4. Impacts on other stages
 - Stage 4 and 5
5. Decisions and next steps

- The Stage 3 opening date in December 2018 is at high risk
- This results from:
 - A late start of dynamic testing following the voltage transformer failure in November 2017
 - Challenges to completing fit-out, testing and commission of the routeway
 - Rolling stock that is less tested and stable than planned for
 - Insufficient testing time remaining and poorer productivity than planned in testing thus far
- CRL has reviewed its delivery plan and the options available

Schedule priorities



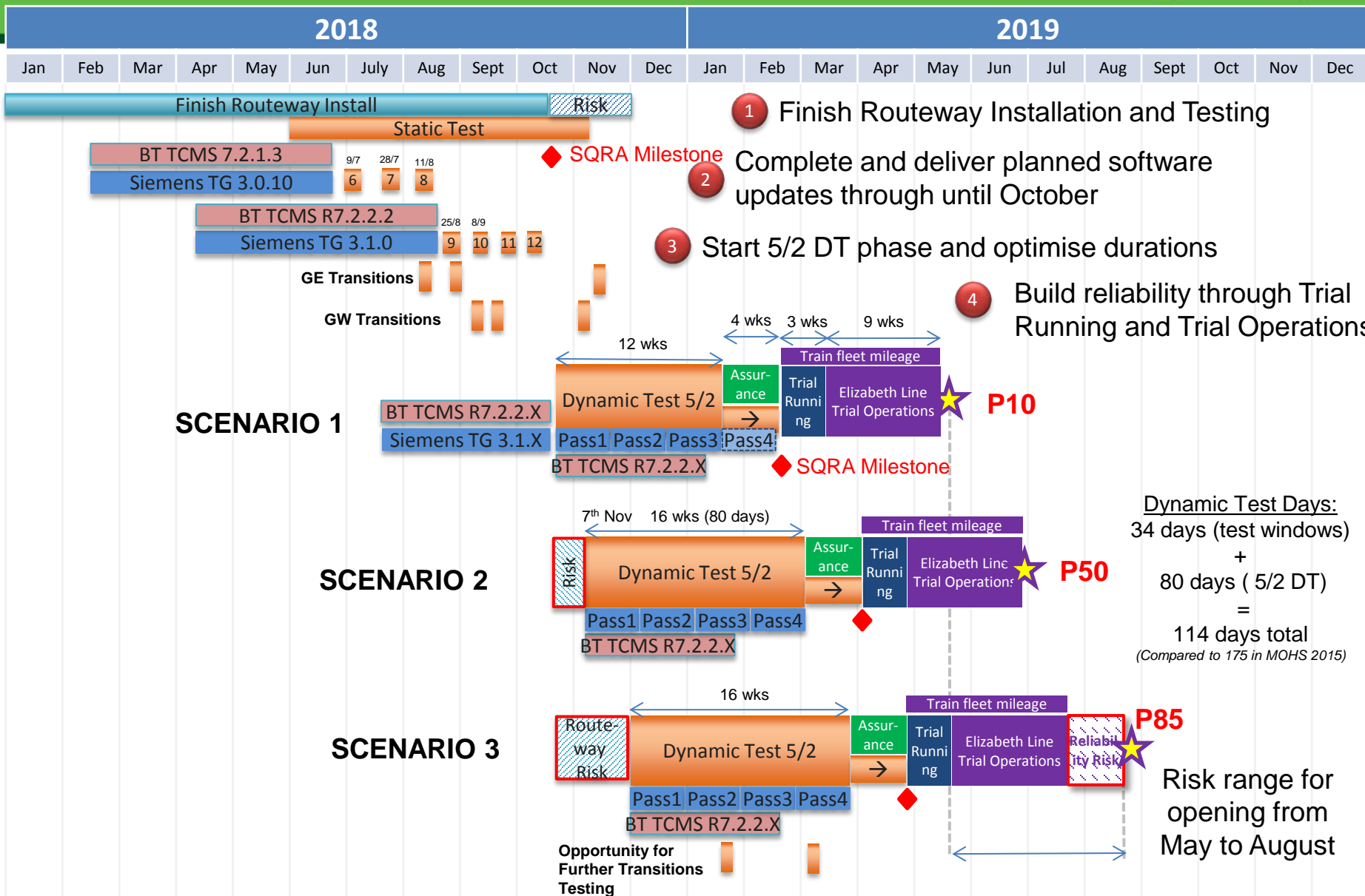
1. Finish the routeway construction/static testing to enable “full” 5 days per week Dynamic Testing
2. Complete and deliver planned software updates (train and signalling)
3. Start 5/2 Dynamic Testing phase and optimise Dynamic Testing iterations (Siemens tests primarily) and bug-fix train/signalling software
4. Allow for a safety assurance period at the end of testing
5. Re-introduce trial running (reliably meeting capacity) and trial operations – building fleet and system reliability
6. Finish stations in most efficient way to the planned Staged Completion dates

Schedule – Key Considerations



	Activity	Range
1	Finish routeway installation	22 October through to November
2	Efficiency of testing / train reliability / re-test	Built in 20% re-testing
3	Number of software builds required to deal with bugs, transitions testing and reliability, appreciating the low number of tests successfully passed to date <ul style="list-style-type: none">- Siemens- Bombardier	Base of 4 “passes” of 20 working days (based on Siemens input) with likelihoods of completing all testing after each pass : <ul style="list-style-type: none">• 2 passes 10%• 3 passes 50%• 4 passes 85%• 5 passes 100%

Dynamic Testing Critical Path



Options for opening in December



- ▶ 2 Options for partial or sectional opening in December have been analysed
- ▶ They are judged as not feasible

	Description	Blockers
1	Custom House to Abbey Wood – 5 days/ week	<ol style="list-style-type: none">1. Testing and assurance (signalling) not completed2. Train paths from Old Oak Common3. Segregation of Control Centre to run operational railway as well as dynamic testing not feasible / safe4. Will require completion of GSM-R system and integration with NR5. Huge effort in creating a bespoke safety case6. ORR will need to be convinced that this is a viable and safe railway7. Distraction to full opening – will increase risk8. Integration of this zone into whole route will be complex if running a service
2	Paddington to Whitechapel	<ol style="list-style-type: none">1. Requires full delivery of zones 2,3,4 plus trial operations which is not possible by December2. Requires zones 3 & 4, plus transitions testing to be complete – these are the latest activities in the schedule

Stages 4 & 5



- ▶ CRL fully appreciates the importance of delivering Stages 4&5 in 2019 for TfL's business plan
- ▶ Work is being carried out to test the implications of a Stage 3 delay on options available for Stage 4 potential delivery September 2019 and Stage 5 December 2019
- ▶ Includes assumption that Stage 2 Phase 2 commences at end February 2019
- ▶ Criteria for assessment now established
- ▶ Proposal will be assessed early August and reviewed by CRL Board on 29 August

Decisions / Next steps



	What	When
1	Continue with dynamic testing windows to prepare / protect Transitions testing in August/September	In progress
2	Siemens and BT formally requested to mobilise for start of 5/2 Dynamic Testing in October	Complete
3	Brief Sponsor Board	26 July
4	Communication to ORR to confirm renewal of ROGS exemption (and extend to end April 2019)	early August
5	Complete options analysis for Stage 4 & 5	early August
6	Formal CRL Board decision	29 August
7	Inform Network Rail (timetabling for Stages 4&5)	September
8	Sponsors formally advised of revised plan	20 September <i>(bringing earlier)</i>

In addition agree communications strategy with Sponsors