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## Overall System Performance – Background Information

The COVIDSafe system works and has worked since it was launched. The DTA has released 9 updates to the COVIDSafe app the latest update released to the app stores for approval on the 14<sup>th</sup> of August.

We have continuously improved the reliability and performance of Bluetooth in both foreground ('Active') and background ('Background Unlocked' and 'Locked') states since the initial release in April. The tables demonstrate the most recent improvements in Bluetooth performance that we have achieved, compared to the April release version.

The improvement for 'Locked to Locked' for iOS only devices continues to improve and is close to being rated 'Good'.

While there has been much focus on the app and iOS Bluetooth performance, we have made a range of significant changes across the whole COVIDSafe ecosystem to enhance performance in the background on iOS devices.

The app captures digital handshakes between devices, while the Health Portal used the by the State and Territory Health Officials uses a filtering algorithm to identify and provide an assessment of close contacts based on this data. These components work together to display close contact information to health officials and are distinguishing feature of the Australian COVIDSafe system.

If any digital handshakes are not received, for reasons such as Bluetooth performance or environmental factors, the Health Portal is able to overcome any lost handshakes following improvements to its filtering algorithm. The algorithm now determines a pattern of behaviour over a 15 minute window, rather than requiring a full set of 15 consecutive handshakes.

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## Test Results 26 April

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	15	15	15	15
Active -> Background Unloc	14	12	12	12
Active -> Locked	2	2	3	4
Locked -> Locked	2	1	1	2

	iOS to Android					
	iPhone 6 - Note 9	iPhone 6 - Galaxy s10	iPhone 6s - Note 9	iPhone 6s - Galaxy S10	iPhone X - Note 9	iPhone X - Galaxy S10
Active -> Active	14	12	12	15	14	15
Active -> Background Unloc	4	15	11	7	15	14
Active -> Locked	5	14	12	8	18	11
Locked -> Locked	2	3	3	2	3	2

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	15	14	15	15	14	15
Active -> Background Unloc	5	7	7	6	8	8
Active -> Locked	2	3	2	3	4	3
Locked -> Locked	2	3	2	3	3	3

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	15	15
Active -> Background	15	15
Active -> Locked	14	15
Locked -> Locked	12	12

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	100%	100%	100%	100%
Active -> Background Unloc	93%	80%	80%	80%
Active -> Locked	13%	13%	20%	27%
Locked -> Locked	13%	7%	7%	13%

	iOS to Android					
	iPhone 6 - Note 9	iPhone 6 - Galaxy s10	iPhone 6s - Note 9	iPhone 6s - Galaxy S10	iPhone X - Note 9	iPhone X - Galaxy S10
Active -> Active	93%	80%	80%	100%	93%	100%
Active -> Background Unloc	27%	100%	73%	47%	100%	93%
Active -> Locked	33%	93%	80%	53%	100%	73%
Locked -> Locked	13%	20%	20%	13%	20%	13%

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	100%	93%	100%	100%	93%	100%
Active -> Background Unloc	33%	47%	47%	40%	53%	53%
Active -> Locked	13%	20%	13%	20%	27%	20%
Locked -> Locked	13%	20%	13%	20%	20%	20%

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	100%	100%
Active -> Background	100%	100%
Active -> Locked	93%	100%
Locked -> Locked	80%	80%



## Test Results 13 May

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	13	14	11	13
Active -> Background Unlocked	12	13	12	13
Active -> Locked	7	6	7	6
Locked -> Locked	5	7	4	6

	iOS to Android					
	iPhone 6 - Note 9	iPhone 6 - Galaxy S10	iPhone 6s - Note 9	iPhone 6s - Galaxy S10	iPhone X - Note 9	iPhone X - Galaxy S10
Active -> Active	14	12	12	15	14	15
Active -> Background Unlocked	10	15	11	15	13	12
Active -> Locked	5	7	6	8	9	6
Locked -> Locked	4	6	3	3	3	4

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	15	14	15	15	14	15
Active -> Background Unlocked	5	7	7	6	8	8
Active -> Locked	4	3	3	5	3	4
Locked -> Locked	4	6	3	3	3	4

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	15	15
Active -> Background	15	15
Active -> Locked	15	15
Locked -> Locked	14	14

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	87%	93%	73%	87%
Active -> Background Unlocked	80%	87%	80%	87%
Active -> Locked	47%	40%	47%	40%
Locked -> Locked	33%	47%	27%	40%

	iOS to Android					
	iPhone 6 - Note 9	iPhone 6 - Galaxy S10	iPhone 6s - Note 9	iPhone 6s - Galaxy S10	iPhone X - Note 9	iPhone X - Galaxy S10
Active -> Active	93%	80%	80%	100%	93%	100%
Active -> Background Unlocked	67%	100%	73%	100%	87%	80%
Active -> Locked	33%	47%	40%	53%	100%	40%
Locked -> Locked	27%	40%	20%	20%	20%	27%

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	100%	93%	100%	100%	93%	100%
Active -> Background Unlocked	33%	47%	47%	40%	53%	53%
Active -> Locked	27%	20%	20%	33%	20%	27%
Locked -> Locked	27%	40%	20%	20%	20%	27%

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	100%	100%
Active -> Background	100%	100%
Active -> Locked	100%	100%
Locked -> Locked	93%	93%

## Test Results 26 May

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	13	14	11	13
Active -> Background Unlc	12	13	12	13
Active -> Locked	7	7	8	8
Locked -> Locked	5	7	4	6

	iOS to Android, Device As central					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	14	12	12	15	14	15
Active -> Background Unlc	10	15	11	15	13	12
Active -> Locked	5	7	6	8	9	6
Locked -> Locked	4	6	3	3	3	4

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	15	14	16	15	14	15
Active -> Background Unlc	5	7	7	6	8	8
Active -> Locked	4	3	3	5	3	4
Locked -> Locked	4	6	3	3	3	4

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	15	15
Active -> Background	15	15
Active -> Locked	15	15
Locked -> Locked	13	13

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	87%	93%	73%	87%
Active -> Background Unlc	80%	87%	80%	87%
Active -> Locked	47%	47%	53%	53%
Locked -> Locked	33%	47%	27%	40%

	iOS to Android, Device As central					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	93%	80%	80%	100%	93%	100%
Active -> Background Unlc	67%	100%	73%	100%	87%	80%
Active -> Locked	33%	47%	40%	53%	60%	40%
Locked -> Locked	27%	40%	20%	20%	20%	27%

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	100%	93%	107%	100%	93%	100%
Active -> Background Unlc	33%	47%	47%	40%	53%	53%
Active -> Locked	27%	20%	20%	33%	20%	27%
Locked -> Locked	27%	40%	20%	20%	20%	27%

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	100%	100%
Active -> Background	100%	100%
Active -> Locked	100%	100%
Locked -> Locked	87%	87%



## Test Results 1 August

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	13	14	11	13
Active -> Background Unlo	12	13	12	12
Active -> Locked	11	12	10	11
Locked -> Locked	5	7	4	6

	iOS to Android, Device As central					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	14	12	12	15	14	15
Active -> Background Unlo	10	15	11	16	13	12
Active -> Locked	5	14	12	8	18	11
Locked -> Locked	8	12	6	6	6	8

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	15	14	16	15	14	15
Active -> Background Unlo	5	7	7	6	8	8
Active -> Locked	7	6	6	10	6	8
Locked -> Locked	8	12	6	6	6	8

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	30	30
Active -> Background	32	31
Active -> Locked	27	26
Locked -> Locked	13	13

## Observed results

	iOS-iOS			
	iPhone 6 - iPhone 6s	iPhone 6s - iPhone 6	iPhone 6s - iPhone X	iPhone X - iPhone 6s
Active -> Active	87%	93%	73%	87%
Active -> Background Unlo	80%	87%	80%	80%
Active -> Locked	73%	80%	67%	73%
Locked -> Locked	33%	47%	27%	40%

	iOS to Android, Device As central					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	93%	80%	80%	100%	93%	100%
Active -> Background Unlo	67%	100%	73%	107%	87%	80%
Active -> Locked	33%	93%	80%	53%	120%	73%
Locked -> Locked	53%	80%	40%	40%	40%	53%

	Android to iOS					
	Note 9 - iPhone 6	Galaxy S10 - iPhone 6	Note 9 - iPhone 6s	Galaxy S10 - iPhone 6s	Note 9 - iPhone X	Galaxy S10 - iPhone X
Active -> Active	100%	93%	107%	100%	93%	100%
Active -> Background Unlo	33%	47%	47%	40%	53%	53%
Active -> Locked	47%	40%	40%	67%	40%	53%
Locked -> Locked	53%	80%	40%	40%	40%	53%

	Android to Android	
	Note 9 - Galaxy S10	Galaxy S10 - Note 9
Active -> Active	100%	100%
Active -> Background	100%	100%
Active -> Locked	100%	100%
Locked -> Locked	87%	87%