

Memo FDP Calculation

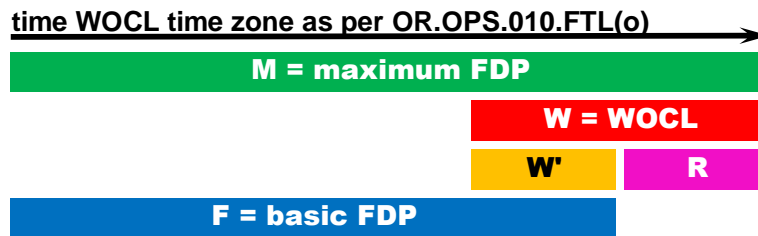
EU-OPS 1.1105 1.5 : “When the FDP ends in or fully encompasses the WOCL, the maximum FDP stated in point 1.3 and point 1.4 will be reduced by 50 % of its encroachment.”

To calculate the Basic FDP (F) for a specific Start of FDP, the Maximum FDP (M) per EU-OPS 1.1105 1.3 and 1.4 is added to calculate the End of FDP. The following cases arise:

1. FDP fully encompasses WOCL

When the FDP fully encompasses (but not start in) the WOCL (4 hours, from 2am to 6am), the 50% reduction equates to the maximum reduction of 2 hours.

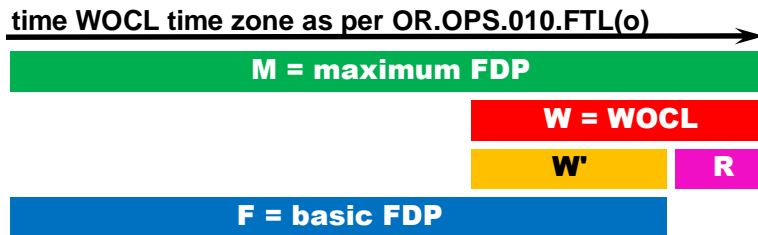
2. FDP ends in WOCL



When the FDP ends in the WOCL, the encroachment of the Maximum FDP equals to W, hence the reduction $R = W/2$. The Basic FDP is calculated as $F = M - R = M - W/2$.

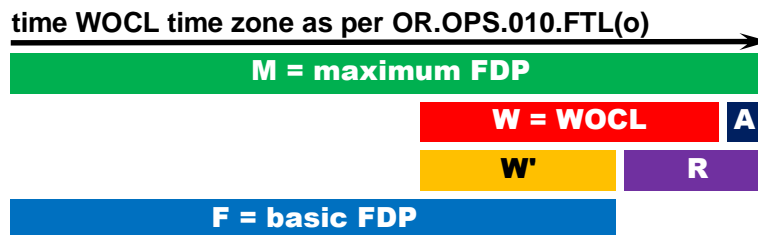
The thus calculated FDP encroaches the WOCL by $W' = W/2$. Therefore, the Maximum FDP should have been reduced by 50% of W' , hence 50% of $W/2$ or $W/4$.

3. FDP ends in WOCL - correction



To solve this inconsistency, the Maximum FDP (M) is reduced by R to calculate the Basic FDP. The calculated Basic FDP (F) encroaches the WOCL by W' . The objective is to reduce the Maximum FDP (M) by $R = W'/2$, hence $W' = 2R$. Since the $W = W' + R = 2R + R = 3R$, the Maximum FDP needs to be reduced by $W/3$.

4. FDP ends in WOCL - general



The general solution to calculate the Basic FDP when the Maximum FDP (M) ends close after (A) the WOCL: reduce the Maximum FDP (M) by R. The calculated Basic FDP $F = M - R$ encroaches the WOCL by W' . The objective is to reduce the Maximum FDP (M) by $R = W'/2$, hence $W' = 2R$.

Since $W = W' + (R - A) = 2R + (R - A) = 3R - A$,

the Maximum FDP needs to be reduced by $(W+A)/3$, limited to 2 hours.

Considering $W = WOCL = 4$ hours, A must be equal to or less than 2 hours. When the Maximum FDP ends more than 2 hours after the WOCL, the formula $(W+A)/3$ is limited to the maximum of 2 hours, hence has the same effect as when the WOCL is fully encroached.