Let $S$ be a semitopological semigroup. Denote by $\text{AP}(S)$, $\text{WAP}(S)$ and $\text{LUC}(S)$ the spaces of almost periodic functions on $S$, weakly almost periodic functions on $S$ and left uniformly continuous functions on $S$ respectively. Existence of left invariant means (LIM for short) on these spaces can characterize various fixed point properties (FPP for short) of $S$ acting on subsets of locally convex spaces (and vice versa). We consider FPP of $S$ acting as non-expansive quasi equicontinuous mappings on a weakly compact convex set. When $S$ is separable we show, among other things, that this type of FPP is equivalent to the existence of a LIM on $\text{WAP}(S)$ or a LIM on $\text{WAP}(S) \cap \text{LUC}(S)$. Some FPP characterized by the existence of LIM on $\text{AP}(S)$ will also be discussed.

This is joint work with A. T.-M. Lau.