Example 1. *If $\mathcal{F}$ is a free ultrafilter on ω, let $L(\mathcal{F}) = \omega \cup \{\mathcal{F}\}$ as a subspace of the Stone-Cech compactification $\beta\omega$ be the* ***single ultrafilter line****. There is some ultrafilter $\mathcal{F}$ such that $K \uparrow_{pre} LF_{K,P}(L(\mathcal{F}))$ and $K \uparrow_{tact} LF_{K,P}(L(\mathcal{F}))$.*

($L(\mathcal{F})$ is not compactly generated, and thus not locally compact.)

Proof. Let a_n be a sequence such that the sequence $\frac{a_n}{n}$ is unbounded above. Then there is an ultrafilter $\mathcal{F}$ such that $\sigma(n) = (\sum_{m \leq n} a_m) \cup \{\mathcal{F}\}$ is a winning predetermined strategy for K in $LF_{K,P}(L(\mathcal{F}))$.

Let $\mathcal{P}$ be the collection of all legal plays by P against the strategy σ. Consider a finite collection of plays $P_0, \dots, P_{n-1} \in \mathcal{P}$. As $\frac{a_m}{m}$ is unbounded above, we may find infinitely many m such that $\frac{a_m}{m} > n \Rightarrow mn < a_m$. As the a_m partition ω such that P may only play at most m points in each part, there are infinitely many parts which are not filled, and thus $\bigcup_{m<n} P_m$ is not cofinite.

It then follows that the closure of $\mathcal{P}$ under finite unions and subsets, along with all finite sets, is an ideal. Its dual filter may then be extended to an ultrafilter $\mathcal{F}$ such that every possible play by P is the complement of some member of $\mathcal{F}$, making σ a winning predetermined strategy.

A winning tactic can then be easily constructed by using the moves by P as the round number in the predetermined strategy. $\square$

Example 2. *Let $T(\mathcal{F}) = 2^{\leq\omega}$ where $2^{<\omega}$ is discrete and for each $c \in 2^\omega$, $\{c \restriction \alpha : \alpha \leq \omega\}$ is homeomorphic to $L(\mathcal{F})$. This is called the* ***single ultrafilter tree****. There is some ultrafilter $\mathcal{F}$ such that $K \uparrow_{pre} LF_{K,P}(L(\mathcal{F}))$ and $K \uparrow_{tact} LF_{K,P}(L(\mathcal{F}))$.*

($T(\mathcal{F})$ is not compactly generated, and thus not locally compact.)

Proof. Assume without loss of generality that P does not play points in 2^ω.

We use a winning predetermined strategy $\sigma^*(n)$ for $L(\mathcal{F})$ and let $\sigma(n) = \bigcup_{m \in \sigma^*(n)} 2^m$. Note that if P has a counter which converges to some $c \in {}^\omega 2$, then P would have a counter within a single branch. Since each branch is homeomorphic to $L(\mathcal{F})$; this is impossible.

A winning tactic can then be easily constructed by using the moves by P, taking the level of the tree played upon as the round number in the predetermined strategy. $\square$

Example 3. *Let $M = \omega^2 \cup \{\infty\}$ be the* ***metric fan*** *where ω^2 is discrete and ∞ has neighborhoods of the form $M \setminus (n \times \omega)$ for any $n < \omega$. Then $K \not\uparrow LF_{K,P}(M)$. (In fact, $P \uparrow_{mark} LF_{K,P}(M)$.)*

(M is not locally compact, but is compactly generated.)

Proof. For each compact set C in M, there exists a minimal dominating function f_C such that for each $(x, y) \in C \setminus \{\infty\}$, $f(x) > y$.

So let P respond to the move $C \in K[X]$ by K on round n with the point $p = (n, s_C)$ such that $s_C = \min(\{y < \omega : f_C(n) < y\}$. It is easy to see that $p_n \to \infty$, so P has a winning Markov strategy. □

Example 4. *Let $S = \omega^2 \cup \{\infty\}$ be the* ***sequential fan*** *where ω^2 is discrete and ∞ has neighborhoods of the form $M \setminus \{(x, y) : x < f(y)\}$ for any $f : \omega \to \omega$. Then $K \uparrow_{pre} LF_{K,P}(S)$ and $K \uparrow_{tact} LF_{K,P}(S)$.*

(S is not locally compact, but is compactly generated.)

Proof. Let $\sigma(n) = \omega \times (n+1) \cup \{\infty\}$. By defining $f(y)$ to be greater than the x-coordinate of all P's plays through round y, we see that $M \setminus \{(x, y) : x < f(y)\}$ misses every move by P, so P cannot converge to ∞.

A winning tactic can be easily constructed by using the y-coordinate of P's moves as the round number in the predetermined strategy. □