Abstract. Let $M$ and $N$ be admissible Hausdorff topological spaces endowed with admissible families of open coverings. Assume that $S$ is a semigroup acting on both $M$ and $N$. In this paper we study the behavior of limit sets, prolongations, prolongational limit sets, attracting sets, attractors and Lyapunov stable sets (all concepts defined for the action of the semigroup $S$) under equivariant maps and semiconjugations from $M$ to $N$. 