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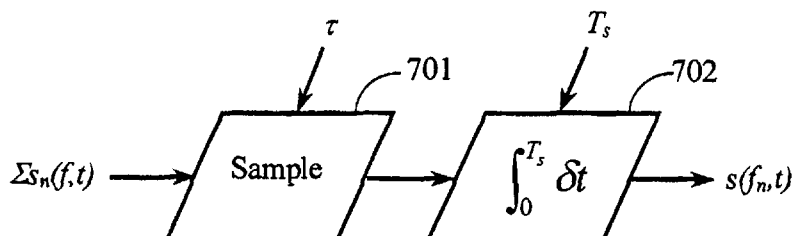
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(54) Title: CARRIER INTERFEROMETRY CODING AND MULTICARRIER PROCESSING



(57) **Abstract:** Carrier Interferometry (CI) codes include families of orthogonal polyphase codes that have no length restrictions and can be used for direct-sequence and multicarrier coding. Quasi-orthogonal CI channel codes simultaneously improve probability-of-error performance and increase throughput. CI filtering (701, 702), which is based on CI codes, enables filtering and correlation operations via sampling and adding. CI codes simplify transform operations, such as Fourier transforms, by reducing or eliminating complex multiplications. CI filtering may be used to simplify synthesis and analysis functions and allow all physical-layer processing operations to be consolidated into simple sub-carrier selection and weighting operations. Thus, CI processing enables a software-defined baseband processor.

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