CoCoALib - Feature #1150

New fn: transform ideal with ring hom

22 Jan 2018 18:30 - John Abbott

Status:	New	**Start date:**	22 Jan 2018
Priority:	Normal	**Due date:**	
Assignee:		**% Done:**	0%
Category:	New Function	**Estimated time:**	0.00 hour
Target version:	CoCoALib-1.0	**Spent time:**	0.20 hour

Description

Do we want a new fun for transforming an ideal with a ringhom?
TransformIdeal(const ideal& I, const RingHom& phi)

[taken from a photo of the whiteboard]

History

#1 - 22 Jun 2020 10:34 - John Abbott

- Description updated

What is this supposed to mean? Does it mean the ideal generated by {phi(f) | f in I}? What else could it mean?
When might it be useful?

Short example: let $P = QQ[x]$ and let phi send x |-> x^2, so phi is not surjective.
Let I be the ideal generated by x. Then ${phi(f) | f in I}@ is not an ideal.

Let G be any set of generators of I. Then given the proposed definition in line 1 of this note,
we have that phi(G) is a set of generators of phi(I).

Given this defn, impl should be easy... but is it useful for anyone?